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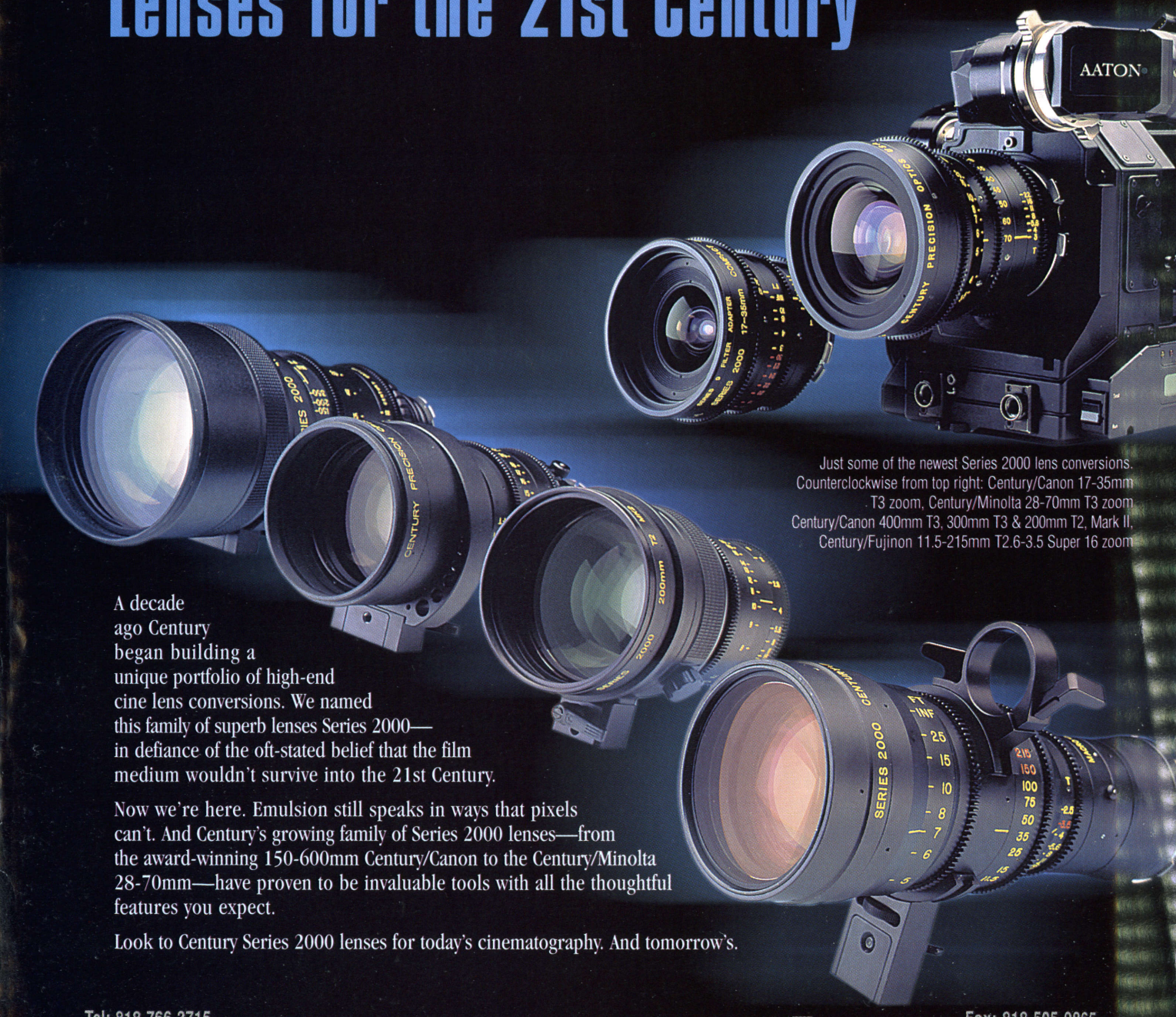

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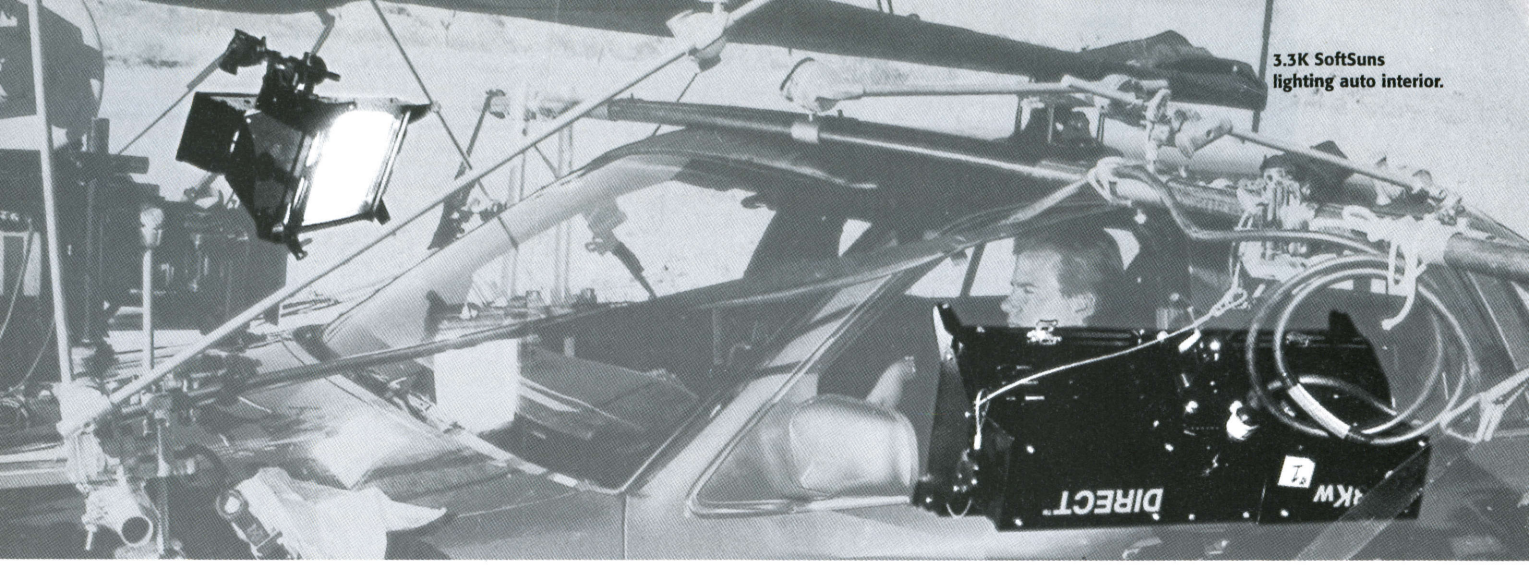

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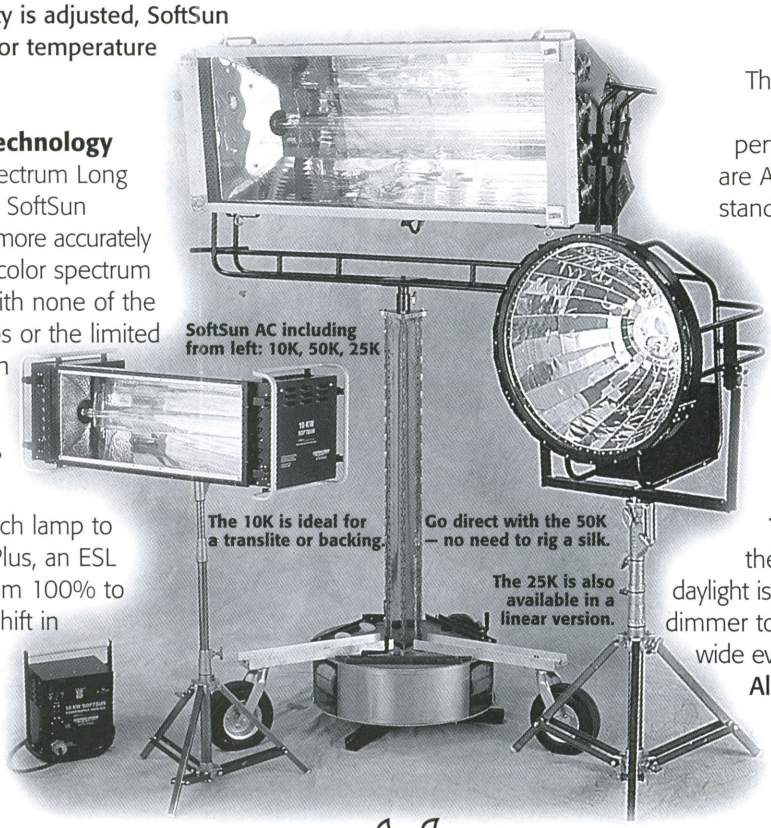

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The International Journal of Film & Digital Production Techniques

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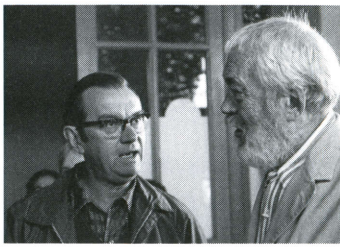

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On Our Cover: U.S. astronauts hover high above the Red Planet in *Mission to Mars,* a science-fiction adventure directed by Brian De Palma and photographed by Stephen H. Burum, ASC (photo by Rob McEwan, courtesy of Warner Bros.).

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Jay Holben
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Linda Whalen

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"The Groom," Malibu
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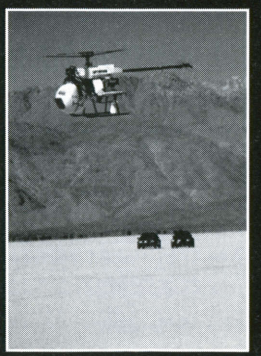
FROM THE AIR.



IV 1/2, Volkswagen, Mexico
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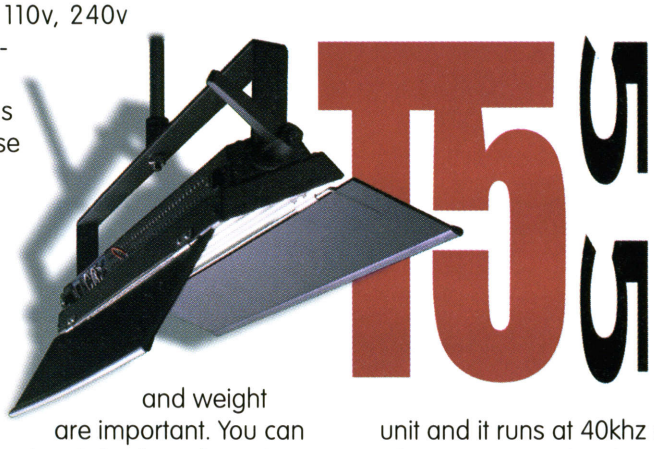

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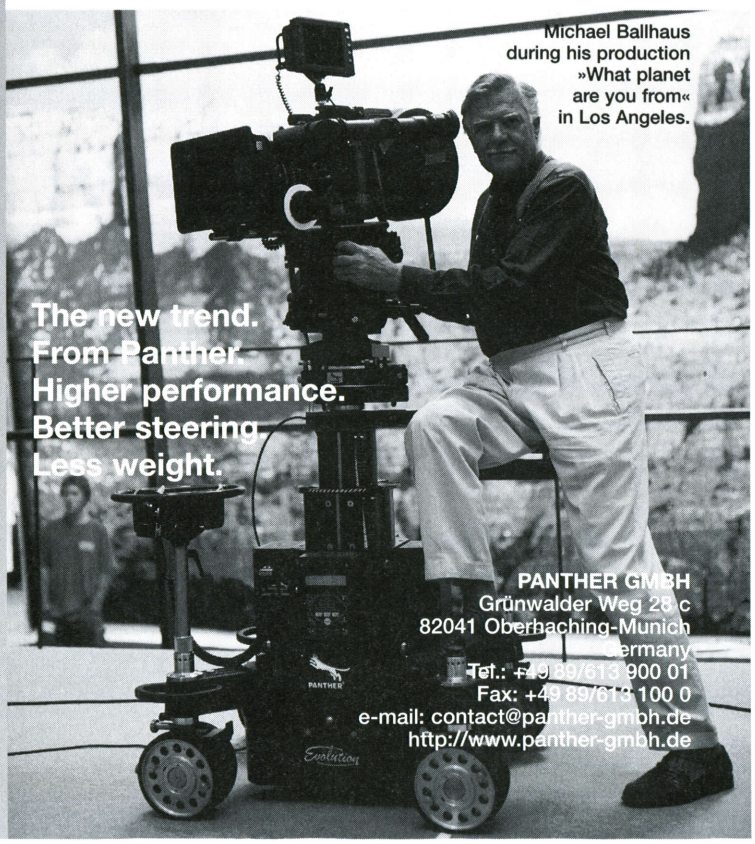

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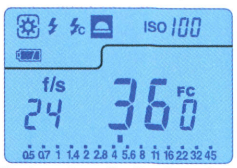
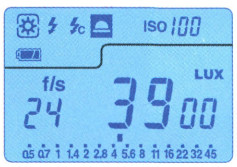
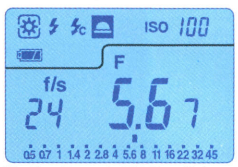


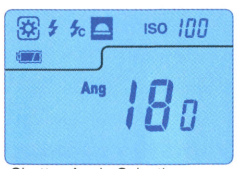
Footcandle + Shutter Speeds F.P.S. + f/stop



Lux + Shutter Speeds F.P.S. + f/stop



Shutter Speeds F.P.S. + f/stop



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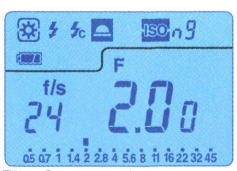

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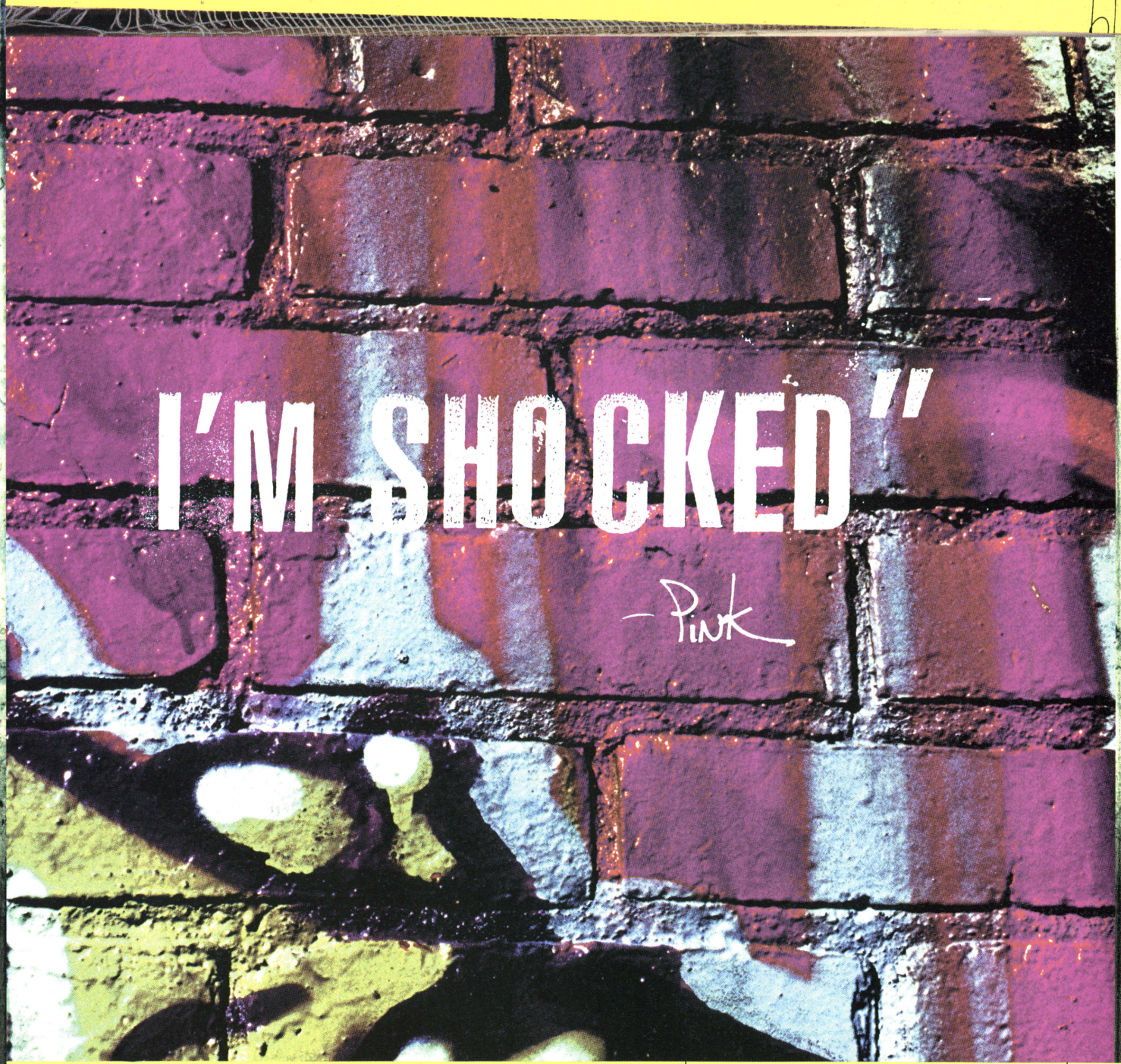

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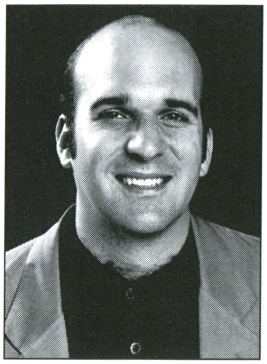


Lighting is one of the most critical, complex and underrated aspects of any motion-picture production. Expert illumination can mean the difference between a good picture and a great one, and it can occasionally elevate even pedestrian material to a new plateau. Nevertheless, this key visual element is often marginalized during the headlong rush of production, when budget-conscious executives frequently feel the need to cut back on time and money.

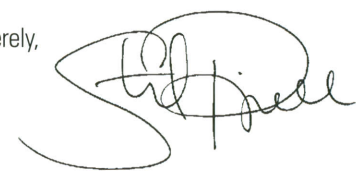
This reality can vex directors of photography, for whom the art of lighting is a lifelong pursuit. Each film project presents a unique set of challenges, so even the most experienced cinematographer constantly faces new scenarios on the set. Given the proper equipment and time, however, a seasoned cameraman can produce a look that will enhance the narrative in ways that even a picture's screenwriter or director may not have foreseen.

This issue of *AC* features a special section highlighting the expertise that a group of accomplished cinematographers brought to recent projects. Beginning on page 74 with an essay penned by new ASC member Richard Crudo, this section presents a series of detailed lighting diagrams and firsthand scene breakdowns by Dick Pope, BSC *(Topsy-Turvy),* Conrad Hall, ASC *(American Beauty),* Anna Foerster *(Pitch Black),* Bill Roe *(The X-Files),* Shane Hurlbut *(The Skulls),* Michael Spiller *(Sex and the City)* and Hugo Cortina *(JAG).* Hopefully, their insights will illustrate the fact that good lighting requires not only technical expertise, but also a refined aesthetic sensibility.

These qualities have consistently been evident in the work of cinematographer Stephen H. Burum, ASC, whose most recent project, *Mission to Mars,* reteamed him with director Brian De Palma for the eighth time. Our coverage of the picture includes a piece about Burum's photography ("Angry Red Planet," page 50) and a sidebar detailing some of the film's impressive visual effects ("Space Race," page 58). For those of you who'd like to contrast modern working methods with the "old-fashioned way," Jan Alan Henderson's historical about the sci-fi classic *Destination Moon* ("Lunar Ambition," page 108) offers an entertaining and informative point of comparison.

Back on Earth, Jack Green, ASC brought his keen eye to *Girl, Interrupted* ("Trouble in Mind," page 62), a searching drama about a young woman's attempts to conquer her inner demons. We've also traced the career of renowned cinematographer Oswald Morris, BSC ("A Man for All Seasons," page 38), whose sterling work behind the camera recently earned him the ASC's International Award.

Sincerely,



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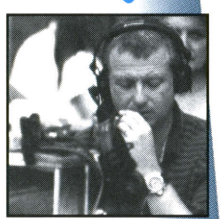
I am looking forward to using Lectrosonics in the future.

Sincerely,

Peter Devlin



Sound Mixer **Peter Devlin** on the set of "Any Given Sunday"

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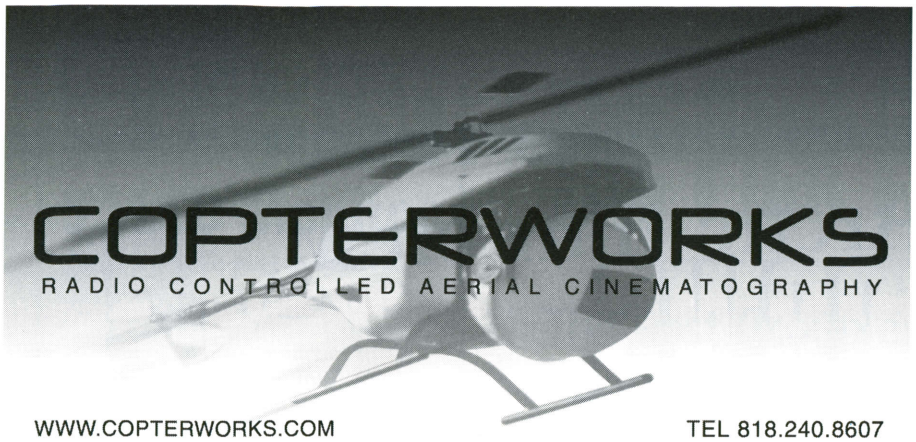

for both television and film work. This is a mutually beneficial agreement that will offer exciting opportunities for both of our progressive companies."

Since The Post Group will become the first to receive Panasonic's new HDTV equipment, it will also become a Los Angeles showcase for the manufacturer's HDTV gear. "Their office is just around the corner from our office," Allgyer points out. "That gives us very hands-on experience with postproduction customers in the L.A. area."

Rheinstein genially agrees, "We want Panasonic to exploit us as much as we want to exploit them."

Just as importantly, the new HD equipment will enable The Post Group to continue its efforts to launch new processes and technologies with the HD format. With its Spirit telecine, The Post Group has already instituted the concept of HD dailies for film, a technique used on the recent ABC movie of the week *Tuesdays With Morrie*. The company also had other HD equipment before the Panasonic agreement — an HD Discreet Inferno and Fire for graphics, and a Sony HDCAM. (Rheinstein notes that the deal with Panasonic does not preclude use of Sony's HD equipment.)

With the Panasonic agreement, The Post Group is adding the ability to edit, generate and manipulate imagery in HD. The first target will be new processes for the film community. "More and more, you'll see HD replace film in preview screenings," promises Rheinstein, who hints that The Post Group is already involved in such a venture.

The Post Group's other new HD ventures could involve everything from trailers to trade-show broadcasts. "We'll apply it in every part of what we're already doing," Rheinstein declares. "Like the Chinese proverb, you eat every piece of the duck and sleep on the feathers."

Allgyer concurs, "There are new techniques that this equipment makes possible." Noting that The Post Group will be the first "on the street" purchasers of the upcoming 3100 VTR with 24-frame capability, he adds, "A whole new industry may fall out of the new digital HD equipment." ■

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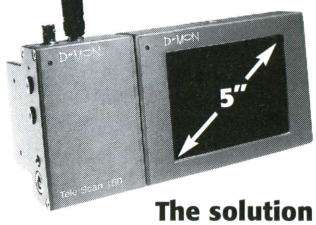

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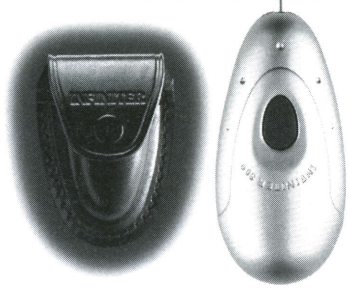
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The Post Process

The Post Group and Panasonic Announce HDTV Partnership

by Debra Kaufman

Tension between equipment manufacturers and postproduction facilities is already an old tradition in this relatively young industry. To address these strains, the Association of Imaging Technology and Sound (ITS) initiated popular roundtable discussions, during which post-house executives were able to air their concerns and complaints directly to top-level manufacturing executives.

Recent signs, however, point to a new phase in the relationship between manufacturers and the post industry, since the uncertainties and costs of HDTV threaten both groups. Confronted with the daunting task of re-equipping their facilities for HD, some postproduction executives have opted out of the post business altogether.

The solution, some post houses and manufacturers have decided, is to join forces. Most recently, local postproduction powerhouse The Post Group and Panasonic Broadcast & Television Systems Company (PBTSC) jointly announced that they have entered into a long-term agreement to develop "new, breakthrough digital postproduction processes for the television and film communities."

Under the terms of the agreement, The Post Group will purchase Panasonic's leading HDTV equipment, including AJ-HD2700 1080i/720P switchable D-5 HD VTRs, AJ-UFC1800 Universal Format Converters, an AV-HS3100 1080i production switcher with digital effects generator, and the PT-D9500U large-venue DLP-XGA projector. With the purchase of the AJ-HD2700s, The Post Group will make Panasonic D-5 HD its main recording format.

Fred Rheinstein, founder/CEO of The Post Group, feels that the agreement is a fortuitous one. Located in Los Angeles, The Post Group faces not only the costs of recapitalizing for HDTV, but the economic threat facing all companies serving the TV/film industry. "We're not only feeling the pressure from HD, which our customers don't want to pay for, but from runaway productions as well," reports Rheinstein. "Now, we're not just competing with the guy across the street, but with those across the border."

He observes that in the past, when an exciting new piece of gear came out, a facility simply had to be among the first to buy it, and then make sure that word got around. Today's more complex — and expensive — scenario makes that an unlikely way to balance the books. "It became clear that we, especially the independents, have to work more closely with manufacturers," he says. "In alliance with a manufacturer, we hope to accelerate communication between us. If they're off on the wrong foot, we can let them know before they're too far along in the manufacturing process. There's an opportunity to cooperate."

Warren Allgyer, president of Panasonic Broadcast & Television Systems Company, notes that The Post Group is "right on the leading edge for cinema, and we're right on the leading edge of digital equipment, so it's a natural for us to come together. The Post Group is one of the world's top post houses. It's recognized not only for its creative talent and technical expertise, but for pioneering new post technologies

Российские вертолеты все-таки умеют летать в темноте

Вызволение тележурналистов с острова Врангеля может с

еще не вышедшему фильму

АНДРЕЙ ВИКТОРОВ

ВЧЕРА в столичный аэропорт «Внуково» прибыли участники международной арктической экспедиции, которых накануне зукотским спасателям удалось вызволить из полярного плена на острове Врангеля.

После прилета журналисты Тат хико Кобаяси, оператор Роман МакГиннисс и российский Николай

медосях и снучках) возвращалась в Москву со смешанными чувствами.- Радость освобождения омрачалась тем, что из-за вынужденного опоздания у экспедиция оказалась просрочена ралийца российская виза. Однако вчера в МИД РФ корреспонденту «Сегодня» пояснили, что все опасения австралийца напрасны: в добных случаях сотрудники

признались, что они поездкой. Японский ист, который уже приезжал на Крайн (впервые Тацухико бывал на острове Д весной 1993 года), очень понравилось природе.

С особой горди дисты сообщили ческом успехе: на

NHK team rescued from Arctic

MOSCOW (Kyodo) A three member team from Japan Broadcasting Corp (NHK

od health, NHK's Moscow bureau said. avel to Moscow on Wednesday where go a health checkup, the bureau said. oned NHK's Moscow bureau to report g in Pevek.

n the island for about three months. and in early September to film a doc- ecosystem, including polar bears

Last bid to rescue Arctic film crew

BY SUE MASTERMAN

rescuers were stranded in a howling blizzard at minus twenty degrees. Rebecca Scott, the partner of Australian film maker Rory McGuinness, told a Melbourne radio station: "I think this

Making news

making news

Arrow 50

"The Arrow 50 retained the subtlety of control on the drag settings and kept functioning smoothly in the worst conditions".

Cinematographer Rory McGuinness made news recently when he was stranded for six weeks on an island in the remote Siberian arctic. While awaiting rescuers, Rory kept shooting the polar bear documentary in conditions that made incredible demands on crew and equipment.

"We had minus 25 to 30 Celsius, plus windchill, but while we had filmstock and bears we just kept shooting. :t soon sorted out the gear. Some of it froze solid, while other things just kept going. The Arrow 50 retained the subtlety of control on the drag settings and kept functioning smoothly in the worst conditions".

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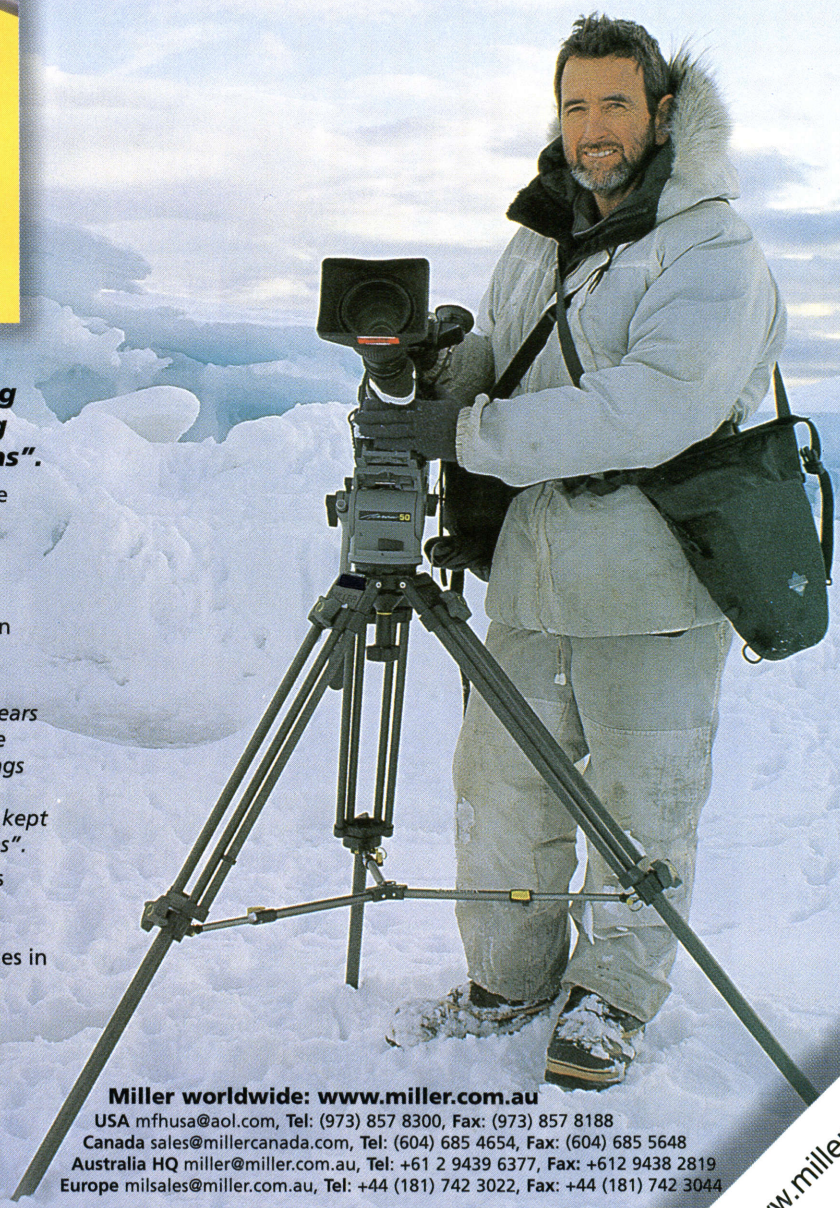

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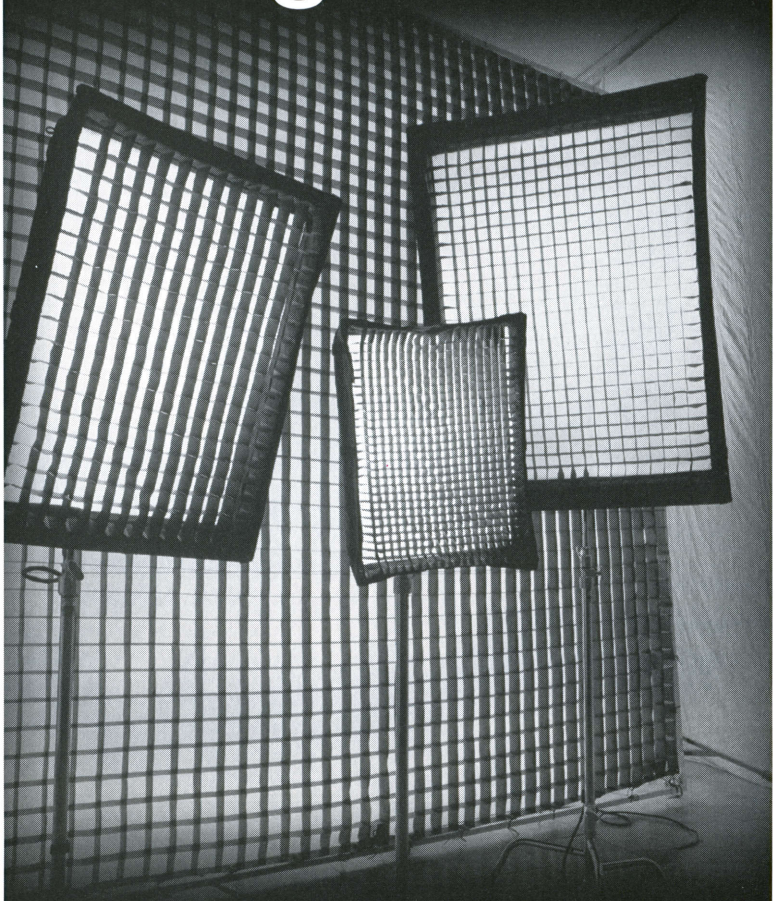

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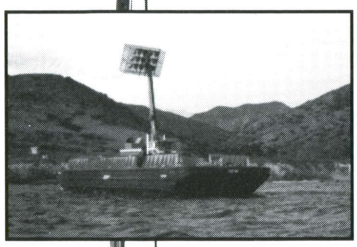

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DVD Playback

by Chris Pizzello

Easy Rider
Special Edition
Columbia TriStar, $24.95

Because it immerses the viewer so thoroughly in the 1960s hippie aesthetic, *Easy Rider* is one of those films indelibly rooted in the era in which it was made. But director Dennis Hopper's refreshingly European-flavored film is too ambitious to be dismissed as a quaint relic of the Flower Power era — it's important to remember that the overwhelming critical and commercial success of *Easy Rider* was one of the true catalysts of the '70s renaissance in American film, a vibrant era in which the director was God and studio heads cowered in his shadow.

Mindful of *Easy Rider*'s influence, Columbia TriStar has rolled out a deluxe, full-dress edition of this important film. The instinctive, naturalistic cinematography of Laszlo Kovacs, ASC is well-represented here, as the anamorphic widescreen transfer features excellent sharpness and surprisingly robust color saturation. A few scenes look slightly washed-out, and some pesky age artifacts are present during the night campfire scenes. But considering the age of the source materials (and the major restoration effort required to repair and preserve them), these small imperfections are quite acceptable.

The real bonus of this very reasonably priced disc is a fascinating and exhaustive one-hour documentary, *Easy Rider: Shaking the Cage*. Despite the pungent haze of marijuana smoke that permeated the *Easy Rider* production, the filmmakers' reminiscences are astonishingly clear-eyed. The principal contributors to the documentary are director/star/co-writer Hopper (who reveals that his aim was to make the "first American art film"), producer/co-star/co-writer Peter Fonda, associate producer William Hayward, production manager Paul Lewis and Kovacs, who admits that he was one of the few sober-minded crew members on the set. "We figured *somebody* had to make this movie!" he notes with a laugh at one point. Particulary fascinating are Kovacs's explanation of the helicopter shot that ends the film, and the filmmakers' ruminations on the meaning of Captain America's famously enigmatic line, "We blew it."

Chinatown
Paramount, $29.95

No cinematographer has ever photographed Los Angeles quite like John Alonzo, ASC did in Roman Polanski's 1974 masterpiece *Chinatown,* which renders the City of Angels as a beautiful, sprawling metropolis that's unmistakably sinister around the edges. Film noir experienced a rebirth with the release of this eloquent study of personal and political corruption in 1940s Los Angeles, a potboiler that revolves around, of all things, a *water* scandal.

While supplements are always welcome on a DVD of a classic film, it's the quality of the audio and visual presentation that should always be the crucial factor if a disc is to earn a place in the proud film buff's personal library. This edition of *Chinatown* does not disappoint, with Alonzo's famous golden-hued tones rendered perfectly throughout. The widescreen transfer features rich color saturation, excellent blacks and an almost total absence of grain. Special mention must also be made of the Dolby Digital 5.1 soundtrack, which envelopes the listener in Jerry Goldsmith's sultry score.

Rounding out the disc is the film's original trailer (in widescreen, no less), which gives away a shocking amount of

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the film's dense plot, and interviews with the three most crucial behind-the-scenes *Chinatown* players: producer Robert Evans, screenwriter Robert Towne and director Polanski. Evans's comments amount to little more than back-slapping, but Polanski and Towne's insights are fascinating, leaving a hungry viewer wondering why there aren't more of them. Indeed, the interview segment clocks in at a mere 13 minutes. When the subjects are this accomplished and articulate, and the topic is *Chinatown*, let the tape roll!

Apocalypse Now
Paramount/American Zoetrope, $29.95

Back in that long-ago era when audio CDs were the cutting-edge in home technology, Pink Floyd's *Dark Side of the Moon* was widely regarded as the ultimate test of your sound system's fidelity. The DVD format already boasts many of its own "litmus tests" (the D-Day sequence of *Saving Private Ryan* or the climactic shootout in *L.A. Confidential,* to name just two), but you can add to the list Chapter 6 on Paramount/American Zoetrope's new *Apocalypse Now* disc. This is the notorious sequence during Francis Ford Coppola's Vietnam War epic in which the U.S. Air Cavalry mounts a hellacious helicopter raid on a tiny North Vietnamese village, to the bombastic musical strains of Wagner's "Ride of the Valkyries." The entire 10-minute sequence is a tour de force of booming sound, eye-popping color and all-around filmmaking moxie — in short, a perfect workout for your home theater system.

It's no surprise that the rest of the *Apocalypse Now* disc has been assembled with the same scrupulous care — the new in-house DVD Lab of director Francis Ford Coppola's own company, American Zoetrope, created the film's DVD master with cinematographer Vittorio Storaro, ASC, AIC supervising the new film-to-tape transfer. *Apocalypse Now* is American Zoetrope DVD Lab's second title after the mid-1999 release of *Fando & Lis,* a 1968 cult classic directed by Alejandro Jodorowsky.

Apocalypse Now is presented in widescreen format enhanced for 16 x 9, along with a lengthy trailer and excerpts from the original theatrical program, in which Coppola rather aptly compares his arduous directorial journey to that of Martin Sheen's Capt. Willard in the film: "[We were both] moving up a river in a faraway jungle, looking for answers and hoping for some kind of catharsis." But the most interesting supplement is the inclusion of the mysterious "Destruction of the Kurtz Compound" footage, which ran underneath the end credits when the film was expanded to wide release in theaters (the original 70mm release had no onscreen credits; audience members were handed a written program with the credits). Coppola provides an interesting optional commentary over the surreal five-minute sequence, which is a fairly stunning piece of filmmaking in its own right. ■

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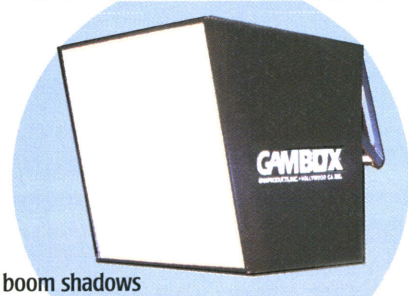

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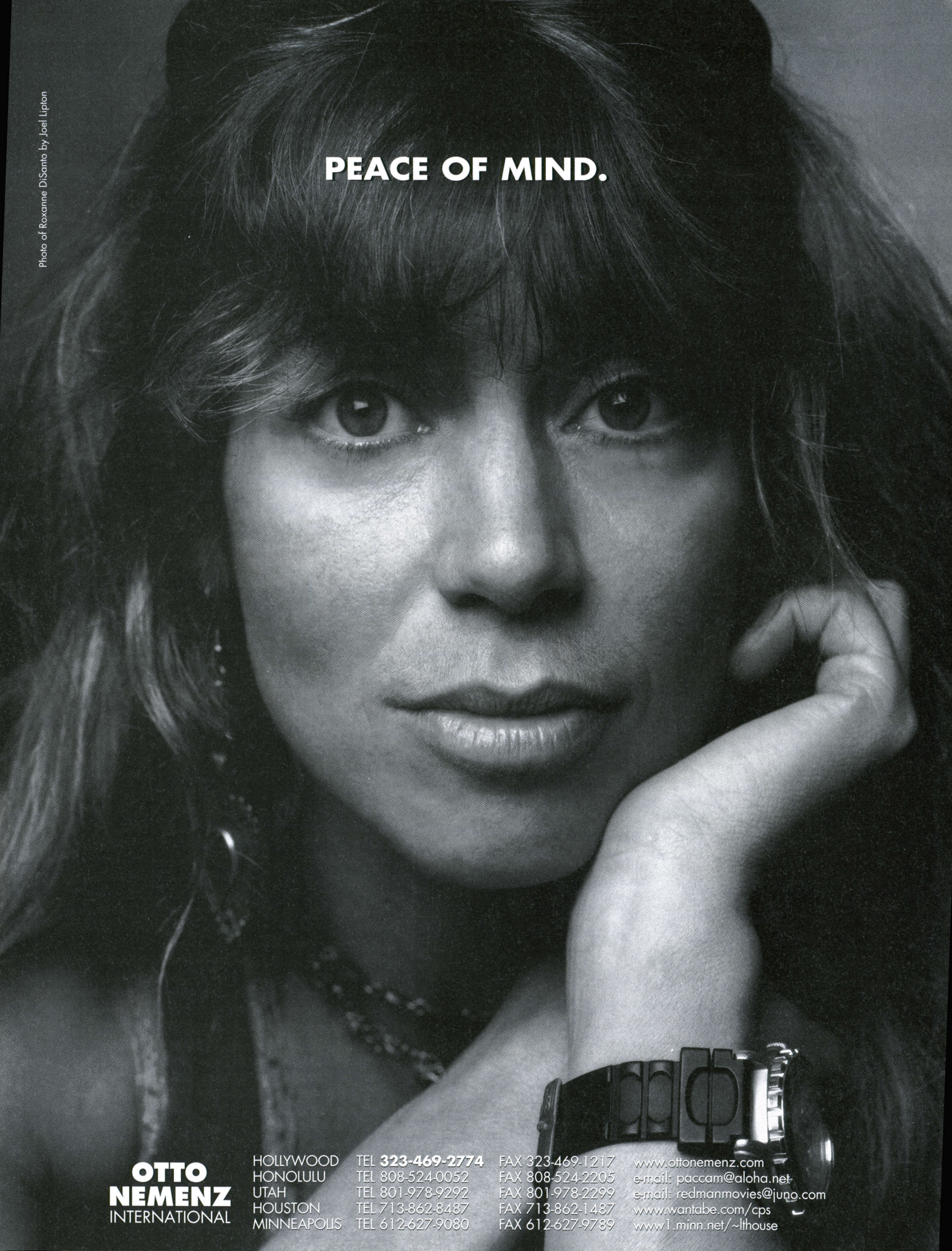
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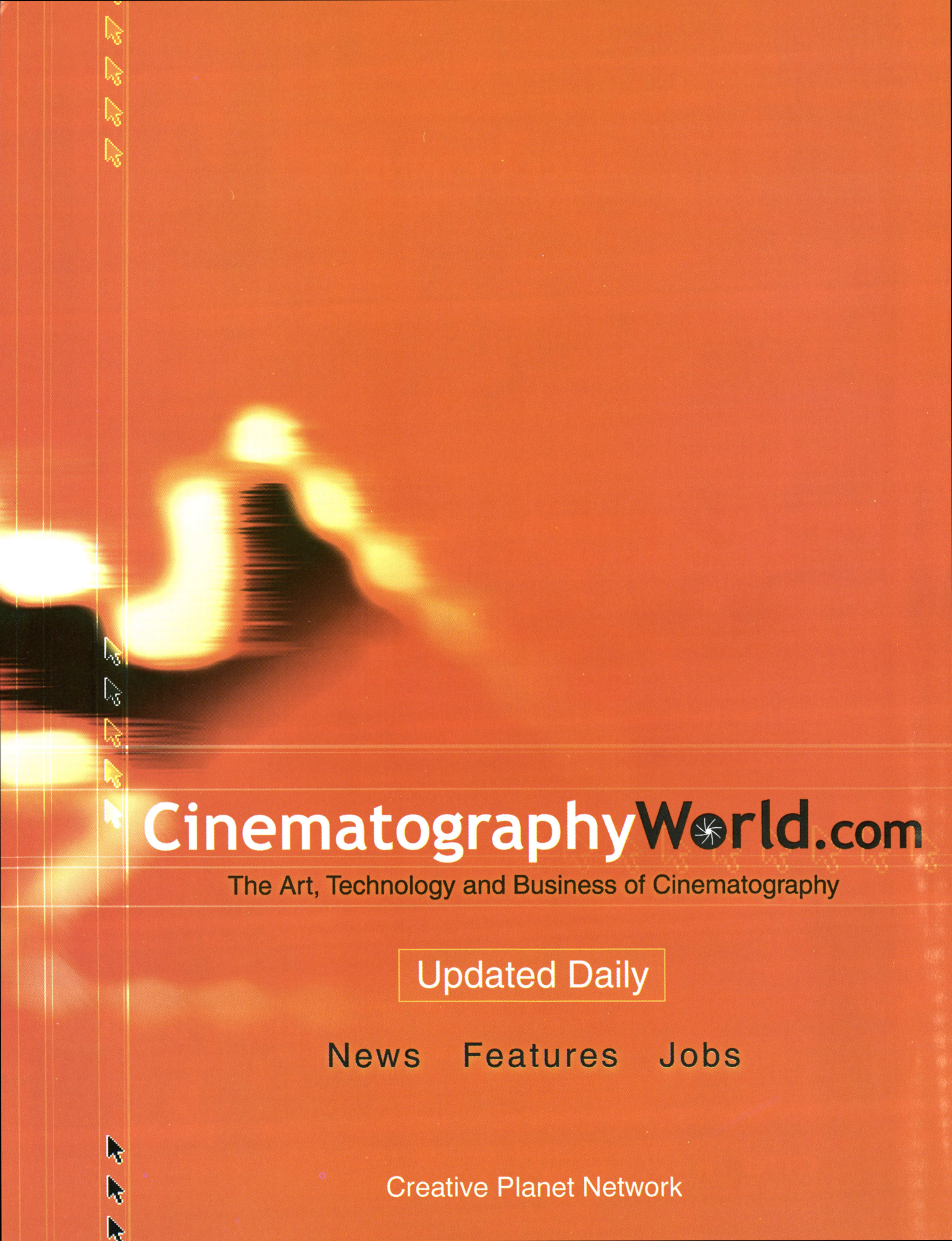
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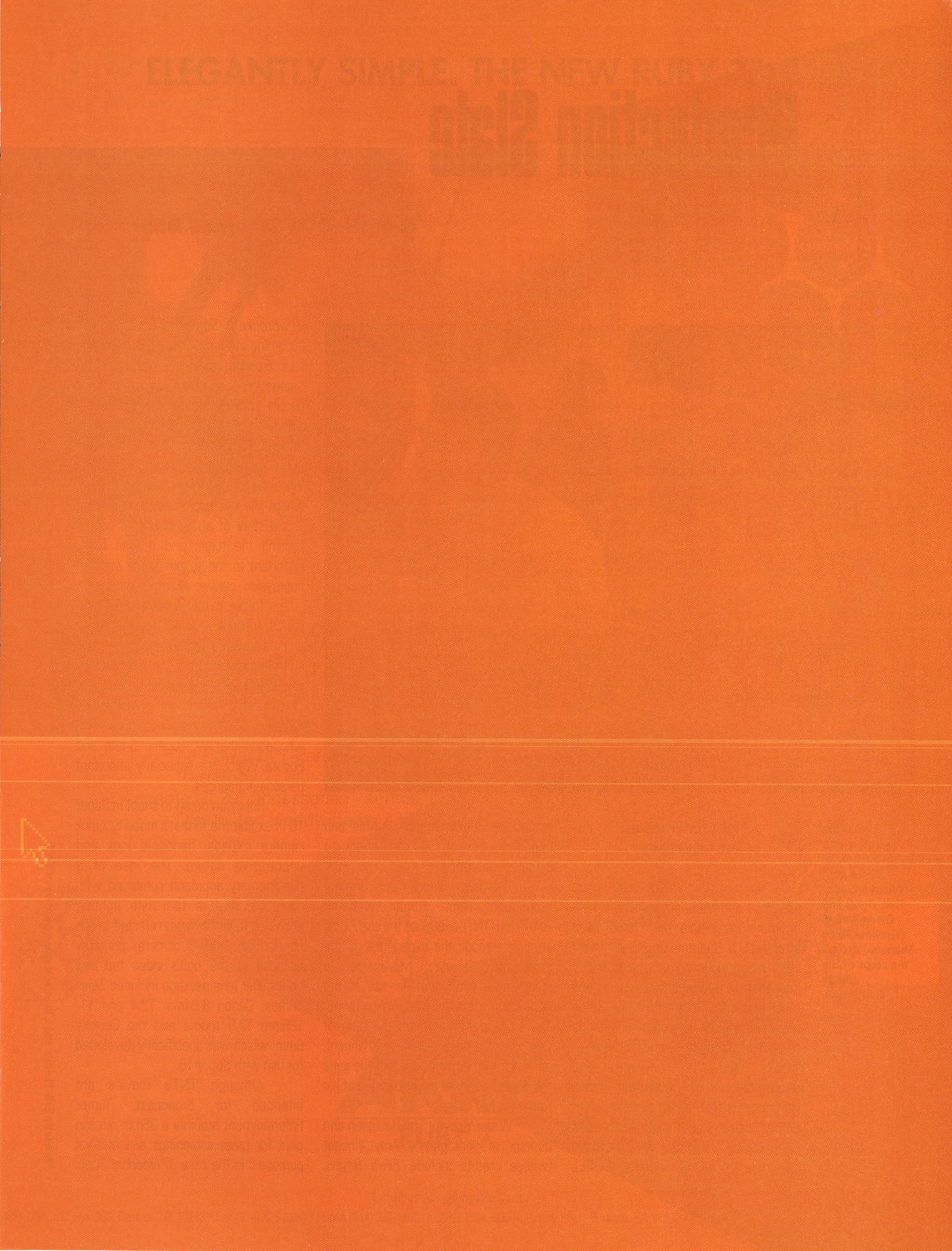
ELEGANTLY SIMPLE, THE NEW RUBY

Production Slate

compiled by Douglas Bankston

Under the scrutiny of a hostile crowd, Daniel Wall (Vondie Curtis-Hall, right) and Owen Walker (Vicellous Reon Shannon) ascend the steps of the county courthouse.

A Fight for Freedom
by Jean Oppenheimer

In the struggle for civil rights, prejudice and tradition have proven to be more intractable than laws. Even after the U.S. Supreme Court's landmark 1954 ruling in Brown vs. the Board of Education, restaurants, bus stations and other public facilities across the South remained rigidly segregated. Change came only gradually — and painfully — thanks to the courage and determination of individual black communities that, aided by non-violent groups such as the Student Non-Violent Coordinating Committee (SNCC) and the Congress of Racial Equality (CORE), staged peaceful marches, sit-ins and economic boycotts in an effort to achieve integration.

Freedom Song, an original production from Turner Network Television (TNT), examines the civil rights struggle through the experience of one community, Quinlan, Mississippi (a stand-in for McComb, the site of the state's first voter-registration movement). The story unfolds through the eyes of Owen Walker (Vicellous Reon Shannon), an African-American teenager who joins the crusade despite the opposition of his father (Danny Glover).

Writer/director Phil Robinson and director of photography Amy Vincent (whose credits include *Eve's Bayou, Jawbreaker, Some Girls* and the upcoming *Walking Across Egypt* and *Kin*) saw *Freedom Song* not as a story of oppression, but rather an example of people standing up for themselves — and, in so doing, leading an entire nation forward. "They didn't call it the civil rights *movement* for nothing," declares Vincent, speaking by phone from Toronto, where she is prepping her next picture. "It's a story of a movement, of people passing the torch, and it was really important to me to not tell a story of oppression, but one of empowerment."

To get a feel for the tale's time period, Vincent watched documentaries and old newsreel footage and pored over still photographs of the era, especially shots by Charles Moore and Danny Lyon. "I am very keen on photographic reference," says the cinematographer, who adds that W. Eugene Smith and Eudora Welty are especially important personal influences.

Robinson opted to shoot in Super 16 to exploit the format's mobility, quick camera reloads, handheld look and unobtrusive nature. The idea of a documentary approach combined with narrative, feature film-style lighting appealed to Vincent, who elected to use an Arriflex 16SR-3 camera, primarily because of the unit's video tap and optics. Her lens package included Zeiss primes, Canon 8-64mm T2.4 and 11-165mm T2.5 zooms and the Century 6mm, which was specifically developed for use with Super 16.

Although TNT's movies are intended for broadcast, Turner Entertainment requires a 35mm release print for press screenings and archival purposes. In the case of *Freedom Song,*

Photos by Erik Heinila and Christian Lantry, courtesy of TNT.

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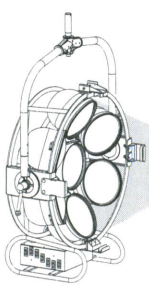

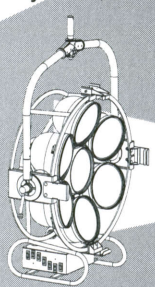

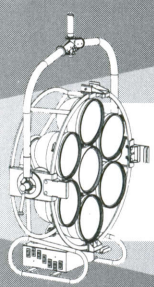

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Right: The Freedom Riders' bus is torched, in a reenactment of the real historical event. To enhance the scene's accuracy, the filmmakers referenced two still photos of the actual incident. Below: Owen ponders his dilemma as he languishes in a holding cell.

that meant doing a blow-up, which directly affected Vincent's decisions about lighting and film stocks.

After a series of tests, she decided to forego high-speed film stock, noting that "the grain in Kodak [Vision 500T] 7279 is insane once you get into the blow-up, [which is done at the interpositive stage]. Every technical issue — grain, contrast, a lens flare or focus problem — is magnified exponentially. Also, because the film's final destination is broadcast television, you can't get away with as much in your over-exposures. You have a tendency to lose detail in the whites more rapidly in video transfer than you do in the release print."

Vincent eventually opted to use Kodak's daylight-balanced Vision 250D 7246 stock for a majority of the show's interiors, all but three of which were practical locations. For other scenes, she employed Kodak's daylight-balanced, 50 ASA EXR 7245 and tungsten Vision 200T 7274, as well as 7222 for the show's handful of black-and-white sequences. She explains that the 7246 "holds overexposure really well. Plus, some of the spaces we used were so huge that I didn't have the capacity to color-correct for a tungsten stock."

As an example, she cites a scene between Owen and his mother, Evelyn Walker (Loretta Devine), that occurs within the cavernous institutional kitchen where Evelyn works. The room had large practical entrances and exits, as well as oversized windows that looked out onto a schoolyard.

To hold the exposure outside, it was necessary to bring the exposure well up within the interior, a task made all the more difficult by the fact it was impossible to light from the ceiling. Vincent placed two Dinos with full blue gels outside, and positioned a nine-light Maxi-Brute (sometimes a nine-light Mini-Brute) inside. "I did not ND or color-correct the windows while using the 7246," she details. "I would just bring the exposure up as much as I could inside, while still keeping the directionality and softness that we liked. Whereas I might normally shoot such a day interior at f2.8 with the window at f11, on this film I would bring the interiors up to f5.6, so that what you were seeing on the outside would only be maybe 2 or 2 ½ stops over. You still have lots of detail outside, but it retains that natural look of being much hotter and brighter than the interior."

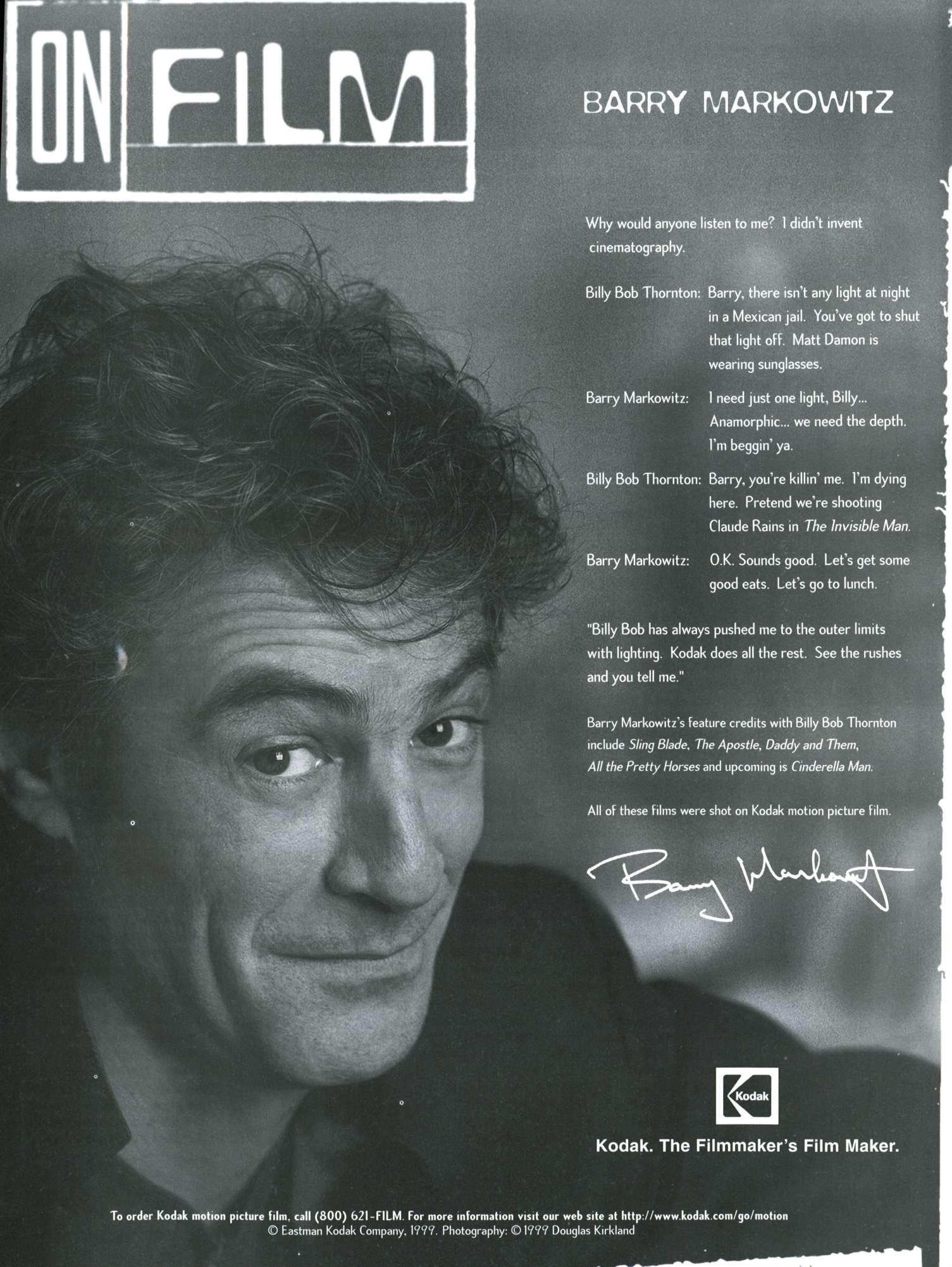
Practicals served as the key lighting source for a number of scenes, most notably a sequence in which police incarcerate students in a holding pen. Located in the basement of a building, the room — consisting of the holding pen and a small space outside the cell — had 7 ½-foot ceilings and only a couple of eight-inch slit windows providing natural light.

When Vincent scouted the location, she was struck by the rows of porcelain sockets lining the ceiling. "It was so cool," she enthuses. "Every other bulb was either burnt-out or had a different wattage, a different color, a different shape or a different level of frost."

After testing a variety of globes in the sockets, she settled on 100-watt, clear-glass household bulbs. "I used clear glass — as opposed to the frosted glass of most practical globes — because it gives the globes a really hard edge," she explains. "We also painted the ceiling with a slightly glossy finish so that we'd get a really hard reflective kick off the globes."

Vincent wanted to show the depth of the cell, but there were few places to hide lights. A couple of small units, set up in the back and off to the side, were hidden in the wide shots by set dressing. The ceiling was so low that it was necessary to cut all the light off it. Vincent broke out the 6mm Century lens to accentuate the oppression of the space. "You could really see how low the ceiling was and how crowded the place was," she declares.

At one point during the scene, the cops turn off the overhead lights and begin hauling prisoners out of the cell two at a time, beaming their flashlights into the frightened faces of the kids. Once the room lights were switched off, there was only a soft source from the side illuminating the actors. "I raked the wall in the very deepest background and lit some very specific setpieces so we'd


ON FILM
BARRY MARKOWITZ
Why would anyone listen to me? I didn't invent cinematography.
Billy Bob Thornton: Barry, there isn't any light at night in a Mexican jail. You've got to shut that light off. Matt Damon is wearing sunglasses.
Barry Markowitz: I need just one light, Billy... Anamorphic... we need the depth. I'm beggin' ya.
Billy Bob Thornton: Barry, you're killin' me. I'm dying here. Pretend we're shooting Claude Rains in *The Invisible Man.*
Barry Markowitz: O.K. Sounds good. Let's get some good eats. Let's go to lunch.
"Billy Bob has always pushed me to the outer limits with lighting. Kodak does all the rest. See the rushes and you tell me."
Barry Markowitz's feature credits with Billy Bob Thornton include *Sling Blade, The Apostle, Daddy and Them, All the Pretty Horses* and upcoming is *Cinderella Man.*
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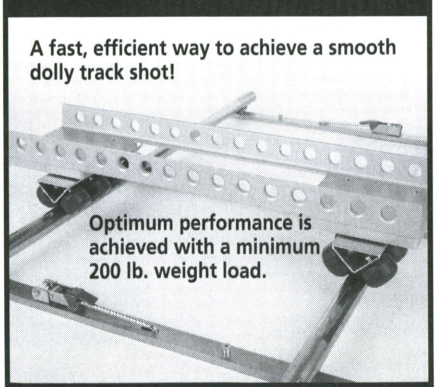

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have some exposure in the frame," Vincent reveals. "When the overhead lights go off, you can still make out shapes and tell that people are in there."

She used a nine-light Mini-Brute as a bounce source. "We call it the nine-light sandwich," she says with a laugh. "It's a nine-light bounced into beadboard, with 216 in front of that and a whole family of flags at the top, bottom and sides. What I love about that is I can vary the intensity without using dimmers, which vary the color temperature. I can use one globe or nine. I was working at a pretty low stop, so I had a lot of versatility with the small nine-light."

For the cops' flashlights, Vincent looked at Xenons but considered them too movie-ish and outside the documentary mode. Instead, she went with the largest-power Maglite rechargable flashlights, which she fitted with a ¼ CTB gels to keep them from getting too warm. She showed the actors exactly when and where to shine their lights, which allowed her to control the level of flaring in the lens. "I let the effect of the light go a couple of stops over, just for the scariness of it," she explains. "Plus, you get a natural reaction from an actor when a really bright light is on them."

A very different set of challenges was presented by two scenes between Owen and his father, which took place in the clearing of a forest. A dense canopy of foliage covered the space. "Production asked if we could shoot without lights, but I couldn't commit to that because it was so weather-dependent," recalls Vincent. "The day we shot there turned out to be the grayest, soggiest, hottest day of the 43-day shoot, with no sun coming through the trees at all."

Manufacturing light was relatively easy; a much tougher problem was taking away the green color that was bouncing off the foliage and the grass. "That green bounce isn't terribly flattering on skin tones," says Vincent. "You don't always see it with the naked eye, but you do on film."

To solve the problem, she used a trick she had learned on *Eve's Bayou,* on which she'd also had to contend with an overcast, foliage-laden set. "I couldn't do anything on the wide shot, because it was a big crane shot. But as soon as we settled into coverage, I laid Duvateen on the ground to remove the green bounce from the grass, and set up 4' x 4' black solids to eliminate the bounce from the foliage. For the lighting, I used my usual multi-globe tungsten units: two Dinos with full-blue correction and light grid diffusion on one side of the actors, and a 12-light with lighter diffusion, like an Opal, on the other side. It gives edge and definition."

Vincent says that her job was made easier by the trusted crew she has assembled. "My camera operator, Henry Cline, is awesome," she enthuses. "He's operated on every movie I've ever shot." Gaffer Christopher Prampin and focus puller Brian Pitts have also worked on almost every picture with her, and provide invaluable support.

Freedom Song marked the second time director Robinson and Vincent had worked together; the cinematographer had previously served as a camera assistant on *Sneakers,* working for her mentor, John Lindley. Unavailable to shoot *Freedom Song,* Lindley had recommended Vincent. A pleased Vincent reports, "The really cool thing is that John came down to North Carolina for a few days and shot second unit for us."

Rated XXX
by Linda Whalen

During a financial dry spell in his career, filmmaker Doug Atchison began daydreaming about pornography. He plotted that he'd use an assumed name, write an interesting adult video, shoot it for a song and make a tidy profit. The problem? Atchison explains, "I always got stuck at the point where you'd have to actually put people in it. I don't think anybody watching pornography is damaged by it. I think the people who are damaged are the people who are actually *in* the films."

His daydreaming got him wondering, though, about the kind of person who does conceive of and produce pornography. The result is *The*

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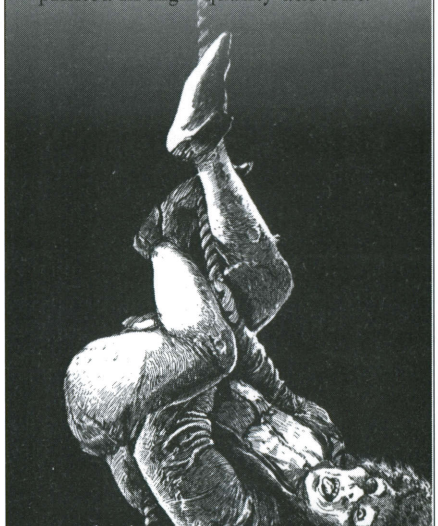

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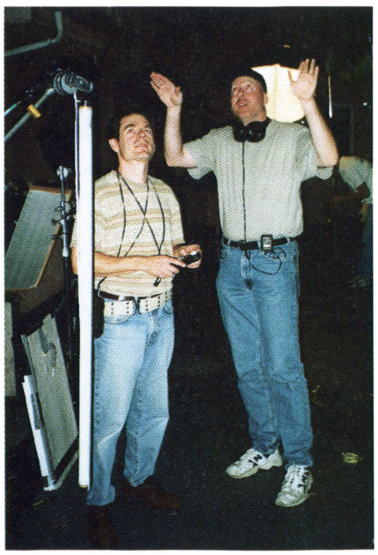
Above: A peep-show girl (Rena Riffel) attempts to arouse Paul, who only wants some affection (frame grab). Below: Mosio (left) and Atchison seek divine guidance on the set.

Pornographer, Atchison's first feature film, and the only thing it has in common with adult video is its low budget.

Shot entirely on location in Los Angeles, *The Pornographer* tracks Paul (Michael DeGood), a lonely man-child whose attempts to connect with women are continually rebuffed. Paul incorporates these experiences into passionate pornographic videos, fantasizing that the women "never say no." Ironically, it's through making adult videos that he finds love, with tragic results.

The film has been showing on the festival circuit, from Santa Barbara to Milan, Montreal and even Slovakia. Along the way, it's won the prize for Best Feature Film at the 1999 Arizona Film Festival, as well as international distribution.



Atchison jokes that after making *The Pornographer,* he could teach a class on how to make a low-budget film look good. First, he short-circuited the often lengthy decision-making process, noting that "because I was the producer/writer/director/editor, I didn't have to have a lot of meetings." In addition, Atchison served as the film's casting director.

When it came to the camerawork, however, Atchison left most of the decisions up to fellow USC alum Christopher Mosio, who served as the project's director of photography. After initially balking at the picture's storyline, Mosio agreed to sign on, explaining, "It became clear to me that this was not a film that was glorifying pornography, but rather one that was taking a truthful look at it and showing how its appeal can be destructive."

Mosio and Atchison agree that extremely thorough preparation is the key to a smooth shoot. Atchision stresses that "the moment you decide to make a movie, the forces of nature line up and challenge you every step of the

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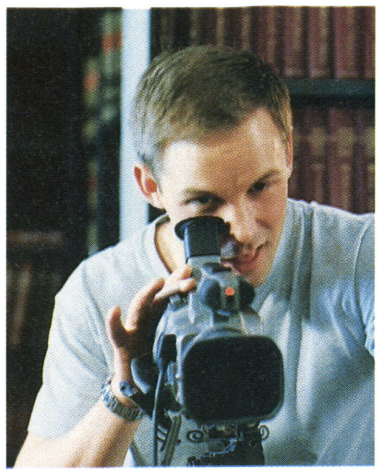


Aspiring pornographer Paul (Michael DeGood) feels a rush of power while shooting one of his first X-rated projects (frame grab).

way. What allows you to move past that is preparation. We had to do a lot of preproduction, because we were only shooting for 20 days and we didn't have a big crew.

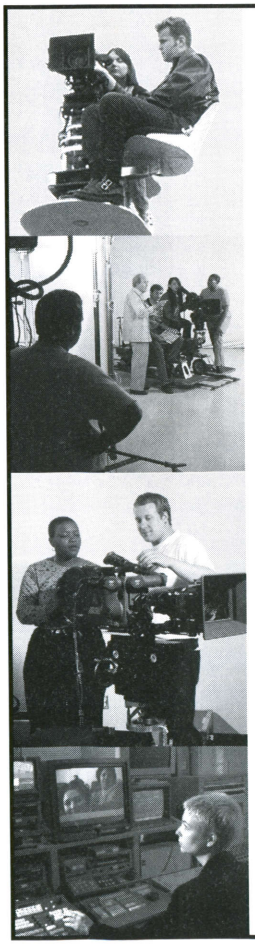
"I also think that on a low-budget project, you need to make sure that all of the cast and crew members have realistic expectations," he adds. "People will want to mutiny when something hits them out of the blue. We had the sound cart and wardrobe rack on the grip truck, since I didn't want to rent more trucks. But you should tell that to people when you're interviewing them; if they can't deal with it, then they're not right for the show."

Shooting without a large or seasoned crew, the cinematographer found his talents tested. "When the crew is on a learning curve, camera moves are time-consuming," says Mosio. "I really had to fall back on fundamentals, concentrating on strong compositions with interesting foreground material. Dan Haberkorn, our production designer, made magic with a piggy bank. He gave me a lot to work with in terms of foreground elements and practicals that I could place compositionally in the background. By doing that type of planning, you can move the characters within the frame without having to move the camera.

Mosio wanted the photography to parallel Paul's emotional growth, but stayed away from the obvious choice of a gritty, grainy feel. Instead, the cinematographer kept the lighting natural and motivated but also moody, letting things get lost in the shadows. He notes with pride, "Someone said the film has a 'silken noir' look, which is just what we were after."

One of the most critical choices Atchison and Mosio made was their decision to shoot on 35mm. Atchision submits that as a result, "The movie looks better, we got into bigger and better film festivals, and the cast and crew took the project more seriously."

Since fresh film stock was cost-prohibitive, Mosio went to Kodak to plead his case. He left with 8,000 feet of discontinued but cold-stored EXR 5296. After doing some snip tests, Mosio camera-tested the emulsion against Kodak EXR 5298 and Fuji 8571. The stocks rendered blacks differently, but after checking his density tests, Mosio



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decided to proceed with multiple stocks, overexposing the 5296 by two-thirds of a stop to better match the 5298. "I had to balance my desire to avoid a lot of grain with the need to use older stock [due to cost constraints]. By overexposing a little bit and being really careful in my lighting, I was able to keep the grain to a minimum. The key was not using different stocks within a scene. When you cut to another scene, you're not going to notice it."

Kodak EXR 5287, a medium-speed, lower-contrast stock that's also discontinued, was employed for exterior day scenes. Overcast skies inevitably coincided with these shooting days, so Mosio built contrast by adding negative fill with cards and a 12' x 12' black Griffolyn.

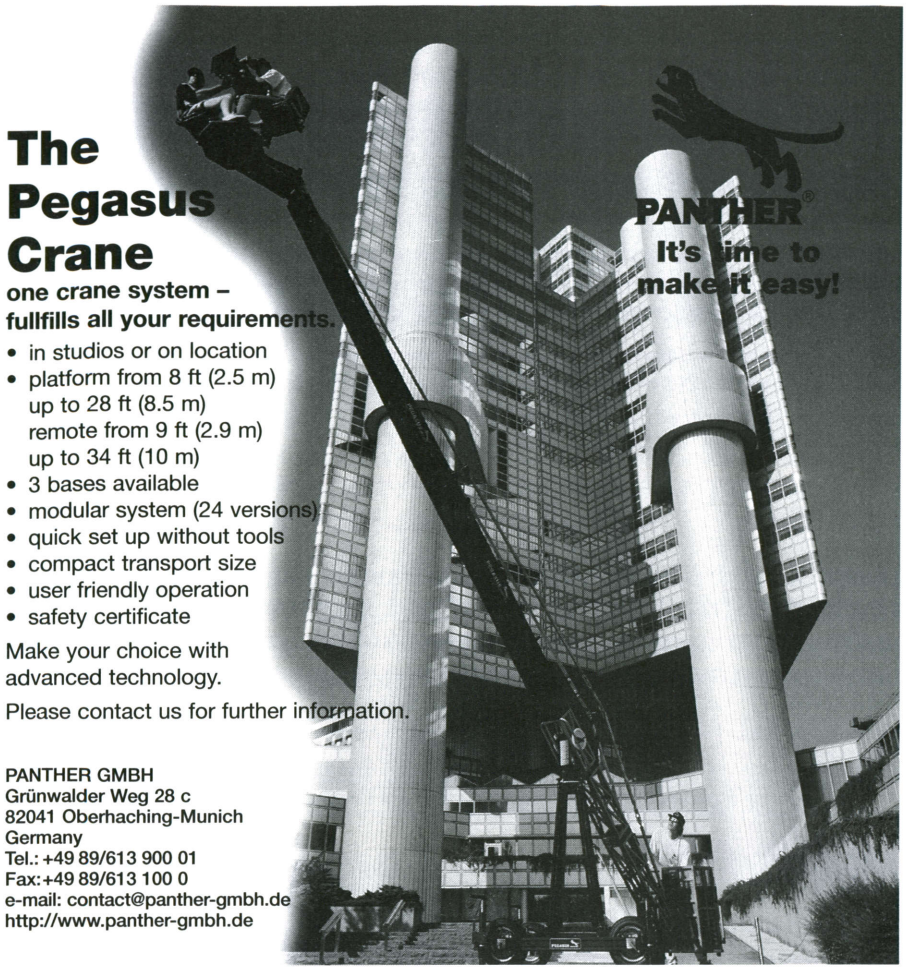
The juggling of multiple film stocks continued into the printing process. Mosio had shot contrast, color and exposure for printing on Kodak 5386. He recalls that after the initial answer print was struck, "we got a call informing us that the lab couldn't get enough of the 5386 to print again." FotoKem suggested substituting Kodak Vision 2383. After six answer prints, both Mosio and Atchison were satisfied. According to Mosio, the drawback to using Vision print stock was that "blacks went very black because of its increased contrast. On the plus side, it helped hide the differences in the black levels of the various shooting stocks."

Cost constraints also played a part in Mosio's choice of camera. While he ultimately decided on a "big, studio-sized Moviecam Super America," the unit proved cumbersome for the tight locations he often found himself in, and heavy for the multiple handheld scenes. Without the luxury of a Steadicam, Mosio's shoulder got a workout. "The plus side of using 1,000-foot rolls with a handheld Super America is that the weight was balanced," says Mosio. "They cut around my groans."

Finances also dictated shooting on location. Atchision explains, "We couldn't afford to buy a soundstage. People often think they can't afford location fees, but you just need to find locations where the fees aren't high."

Mosio agrees. "I think sets are good for speed, but they require a lot of work, a lot of prep time, and a large art department to make them look like real locations. What I like about practical locations on lower-budget movies is that they already look real. They're lived-in, and you can show the ceiling."

Atchison recommends bringing the whole crew to each location before the shoot. He advises, "Bring the sound guy, bring everybody, so you know what the problems are going to be before you shoot there." Mosio used this time to map out camera angles, "going through possible light placements and camera movements, and determining how they would affect the story. Once I do that, I know we'll be prepared to go right into



the shot when the time comes."

A major drawback of budget constraints, Mosio notes, is that "you spend a lot of time not on the creative part of the work, but on the logistical part, trying to get the equipment you want at a price you can afford." Still, Mosio's technical skill is evident in the finished film. Since porn videos are the picture's focus, the filmmakers incorporated them into the opening sequence, featuring an extreme close-up of images shifting across the monitor. To get the pixel-close images, Mosio first set the Moviespeed control on the Super America to match the 29.972 frames per second frame rate of the television. Using an 85mm Zeiss Superspeed lens with a diopter, Mosio rigged a pointer just out of frame on the top of the camera. The pointer almost touched the monitor he was shooting, so his assistant, Alexandra Buresch, could pull focus precisely. Mosio then tweaked the saturation on the monitor and judged the exposure by using a still camera with an analog meter. (Because he distrusts digital meters for reading monitors, Mosio prefers using an analog meter for this purpose.)

Mosio also used the "television" to illuminate the actor's faces in an otherwise dark room. On set, he came up with his plan. "I set up four Kino Flo tubes with different colors: one tungsten-balanced tube, one daylight-balanced, one tube with a light red on it, and one that was in-between. I had my gaffer take a card and physically wave it in front of the tubes at a slow rate, to give the effect of scene changes. With the Kinos, you get a nice soft light, and by holding the card in different places, you can change the color balance a little bit. If you do it right, it can look like scene changes."

During the project's 20-day shoot, the filmmakers put in just three days of more than 12 hours. On those days, both Atchison and Mosio went to crew members individually and asked them to extend the day. "The crew watches you for the first two days," Atchison attests. "By day two, they knew that Chris and I had our act together. They're only going to get pissed if you're wasting time by

being unprepared. I always knew what the shot was, my actors always knew what the blocking was, and Chris knew how to light the scene. That's why the movie looks as if we spent $1.5 million. If we'd actually *had* $1.5 million, it would probably look the same way. We'd have been able to do more takes, and be a bit more expressive with the camera, but the film basically would have looked the same. Of course, everybody would have been paid more, and we'd have had better food on the set!"

For Atchison, the film's big surprise was "how absolutely doable making a film is, when you spend so long thinking it's this Holy Grail. The major thing you hear when you're trying to make a low-budget movie is, 'Oh, you can't do that!' Well, I'm here to tell you that you can do whatever you want to do if it looks good."

Independent Spirit Award Nominees Announced

The nominees for the 15th annual IFP/West Independent Spirit Awards were announced on January 12 during a reception at the El Rey Theater in Los Angeles. The awards will be presented Saturday, March 25 at a beachside tent in Santa Monica.

The nominees for Best Feature Film are *Election*, *The Limey*, *The Straight Story*, *Sugar Town* and *Cookie's Fortune*. The Best Director nominees are Alexander Payne (*Election*), Harmony Korine (*julien donkey-boy*), Steven Soderbergh (*The Limey*), David Lynch (*The Straight Story*) and Doug Liman (*Go*).

The nominees for Best First Feature over $500,000 are *Being John Malkovich* directed by Spike Jonze; *Boys Don't Cry*, Kimberly Pierce; *Three Seasons*, Tony Bui; *Twin Falls Idaho*, Michael Polish; and *Xiu Xiu the Sent Down Girl*, Joan Chen.

Directors of photography receiving Best Cinematography award nominations are M. David Mullin (*Twin Falls Idaho*), Lisa Rinzler (*Three Seasons*), Anthony Dod Mantle (*julien donkey-boy*), Jeffrey Seckendorf (*Judy Berlin*), and Harlan Bosmajian (*La Cuidad*). ➢

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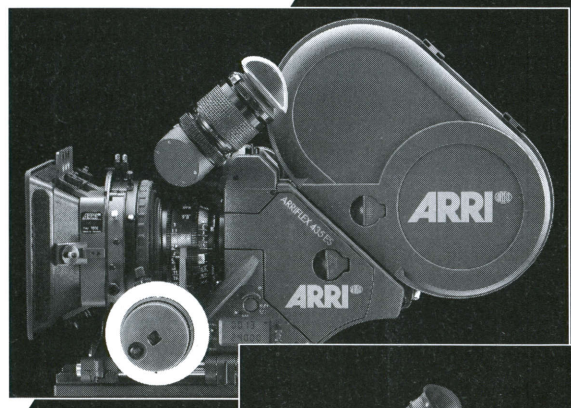

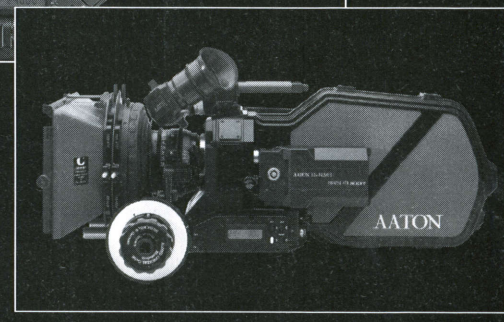

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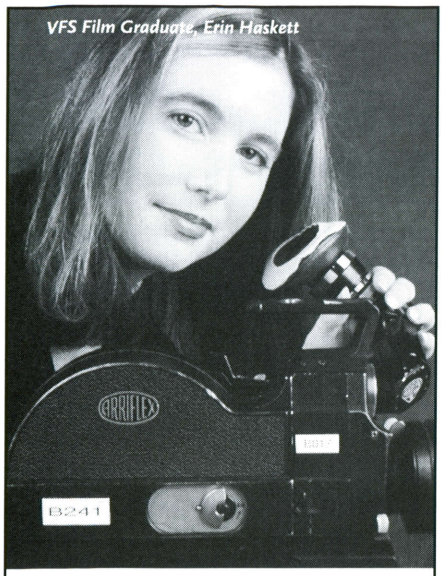

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In the Best Foreign Film category, the nominees are Pedro Almodóvar's *All About My Mother* (Spain), Tom Tykwer's *Run Lola Run* (Germany), Udayan Prasad's *My Son the Fanatic* (England), Mike Leigh's *Topsy-Turvy* (England), and Luc and Jean-Pierre Dardenne's *Rosetta* (Belgium-France).

The March 25 awards ceremony will be broadcast live on the Independent Film Channel, also on the Internet at www.ifctv.com. ■

Errata

Cider House Stocks

I just finished reading the Production Slate section in the January 2000 issue. Can you imagine my surprise when I discovered that the feature *The Cider House Rules* was shot with Fuji film stocks and rented lenses?

I would like to introduce myself, since I was the A-camera, first camera assistant to cinematographer Oliver Stapleton, BSC on the project. The show, which was filmed entirely on location in the Northeast during the fall and winter of 1998, was shot entirely on Kodak film stock. The other point is small, but Oliver *owns* the set of Cooke S4 prime lenses that we used on the picture.

— Doug Schwartz
Camera and
Steadicam operator

Ed. note: *Our writer, the normally reliable Eric Rudolph, has confessed that he erred in these details. He phoned Oliver Stapleton for clarification, and the cinematographer reported that "the film was shot on Kodak 320T (Vision 5277) and 500T (Vision 5279) stocks, with some use of Kodak 250D (Vision 5246). For sunny exteriors, we used 320T (low contrast/color to reduce the garishness), and for dull exteriors I used 250D (to increase contrast). For interiors, we used a combination of 320T and 500T, depending on the light level." In a wry aside, he added, "The Cooke S4 lenses were, in fact, my own, but of what concern this is to the readers I'm not sure!"*

AC apologizes to Mr. Stapleton for the errors, and appreciates his good humor about our mistakes.

Harpooned

Holly Willis, author of the article titled "Re-creating a Tragic History" (Production Slate, *AC* Sept. '99), should find an opportunity to watch *Moby Dick,* since her article begins with a mistake. It is not Captain Ahab who says "I alone lived to tell the tale" in Melville's great novel — it is Ishmael, the narrator, who says these words. Anyone who has seen the movie (or read the book) knows that Ahab does not survive.

— Jonathan Talbot
Warwick, New York

Ed. note: *Our staffers will be keelhauled for this particular gaffe.*

Bond Blunder

In our recent coverage of *The World Is Not Enough* ("Paging 007," Dec. '99), we stated that actor Timothy Dalton's first appearance as James Bond occurred in the 1989 film *Licence to Kill.* In fact, Dalton made his debut as 007 two years earlier in *The Living Daylights.* As penance for *this* error, *AC*'s editors will forego their weekly martinis.

Pushing *Town*

In the December '99 issue, it was noted that the picture *Town and Country,* photographed by William Fraker, ASC, would be featured in the February edition of *AC.* Unfortunately, New Line Cinema has postponed the film's release until fall. We will plan accordingly.

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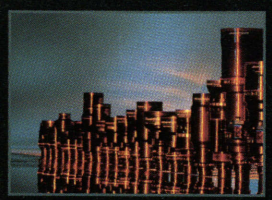

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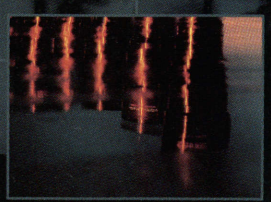

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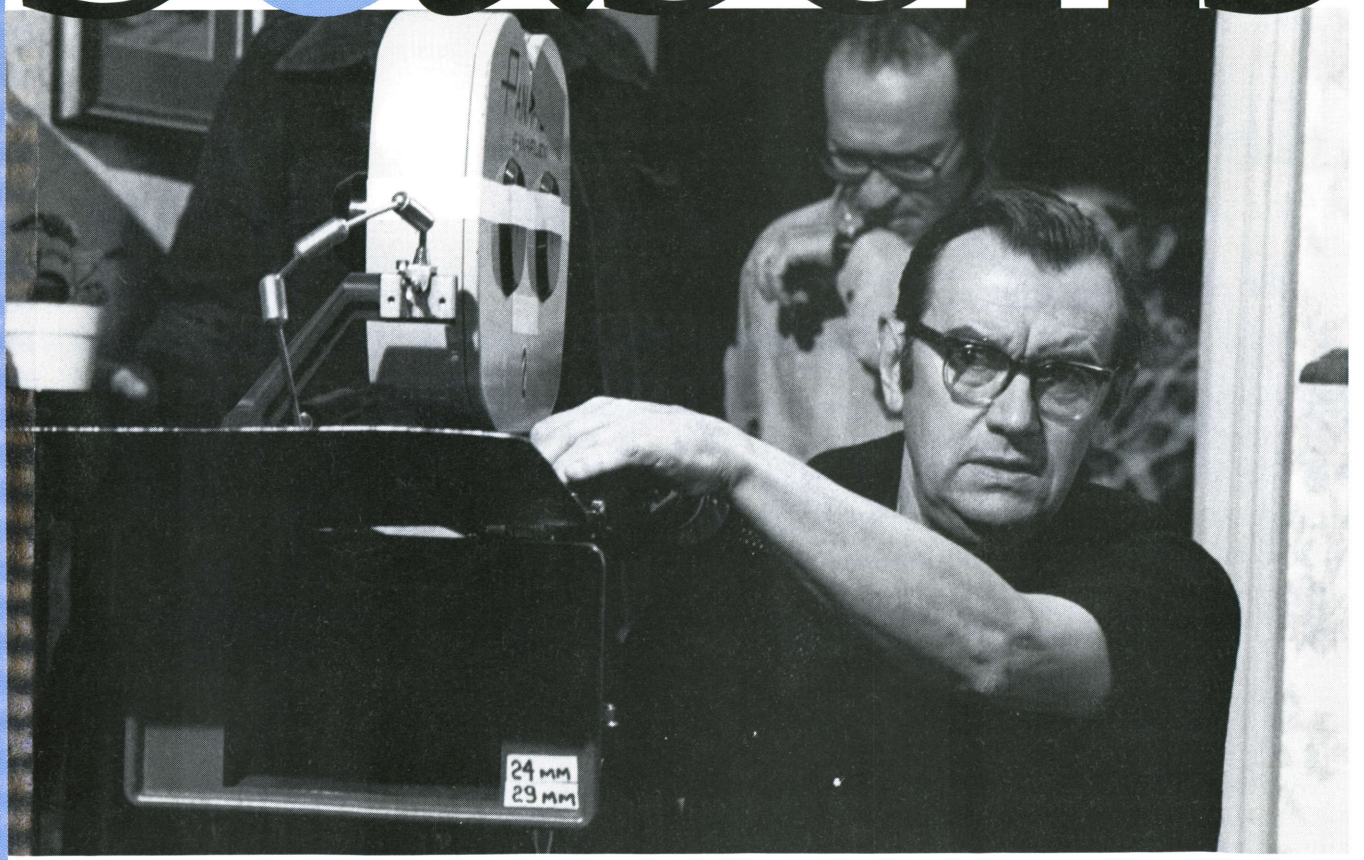
A Man for All Seasons



Oswald Morris, BSC, the ASC's 1999 International Award honoree, lent his talents to a wide range of productions, and left behind a rich cinematic resumé.

by Duncan Petrie

One of the marks of a truly great cameraman is when his contribution to the art and craft of cinematography continues to be recognized and admired long after the work was originally produced. Oswald Morris, BSC retired from film production some 18 years ago, yet his rich legacy as a cinematographer continues to inspire generations of movie buffs

and technicians alike. His resumé includes such major achievements as *Moulin Rouge* (for which he won a BSC Award), *Moby Dick*, *Lolita*, *The Pumpkin Eater* (BAFTA Award), *The Hill* (BAFTA Award), *The Spy Who Came in from the Cold* (BAFTA and BSC awards), *The Taming of the Shrew* (BSC Award), *Oliver!* and *Fiddler on the Roof* (a BSC Award and the Academy Award for cinematography).

Morris's outstanding contribution to cinema history was recognized last month by the American Society of Cinematographers, which presented the British cameraman with its International Award at the 14th Annual ASC Awards, held on February 20 at the Century Plaza Hotel in Beverly Hills, California. Despite being the recipient of countless awards, various fellowships from industry organizations and an honorary doctorate from Brunel University, Morris says he was "absolutely staggered" when he received the news about the International Award; he considers the honor second only to the OBE (Order of the British Empire) he received from the Queen Elizabeth II in 1997. "What is so special is that this is an award from my peers," he says.

As the eighth recipient of the International Award, Morris joins an elite roll call that includes three other British cameramen and BSC members: Freddie Young, Jack Cardiff and Freddie Francis. Morris notes, "It's wonderful for the British industry, getting four of us on the list. It shows we're not exactly schmucks when it comes to photographing movies."

Morris began his career in 1932 at the age of 17, starting out as a clapper boy at Wembley Studios. The occupant of the studio at the time was Associated Sound Film Industries, a small company involved in the production of the notorious "quota quickies," ultra-low-budget films produced to exploit the requirement for British quota legislation. When Morris arrived, the studio was churning out productions at the rate of one a week. "In my first week at Wembley Studios, I caught the last train home every night," he recalls. "Then, on Friday, we worked right through until we finished the film. One of the camera assistants suggested that I shouldn't have to work all night, so they put me in a cafe opposite the studio. The next morning, I went over at eight o'clock and they were still filming. They carried on and finished that film at four o'clock on Saturday afternoon."

The following year, Morris moved to the more salubrious environs of British International Pictures at Elstree Studios, where he worked on major productions such as *Blossom Time* and *Abdul the Damned* (both of which were photographed by Czech émigré Otto Kanturek). An opportunity for promotion led Morris back to Wembley, which by then had been taken over by the British production arm of Fox. The films were still primarily quota pictures, but production values were considerably higher, thanks in part to the creativity and inventiveness of cameraman Ronald Neame, BSC, who became a major influence on Morris. "Ronnie transformed the place," Morris attests. "He had wonderful ideas, and it was then that I really started to take an interest in lighting."

Like so many of his colleagues, Morris found his career interrupted by the outbreak of war. He joined the RAF and became a distinguished pilot, first at Bomber Command and then at Transport Command, where his duties included flying Prime Minister Winston Churchill to major meetings around the world. Neame

Opposite: Morris positions the camera on *Equus* (1977), as director Sidney Lumet (rear) ponders his next move. This page: On Jamaica's North Shore, director Stuart Heisler (left) and Morris shoot lighting tests with actress Linda Darnell for David E. Rose's Technicolor production of the romantic drama *Saturday Island* (1952).

A Man for All Seasons

Right: Lining up a shot on the set of the diabolically clever 1972 thriller *Sleuth* are (left to right, along pool table's rail) operator Jimmy Turrell, Morris, director Joe Mankiewicz and star Lawrence Olivier. Below: Morris and his crew frame actor Gregory Peck during production of *Moby Dick* (1956). The moody adaptation of Herman Melville's novel was directed by John Huston, and also featured second-unit camerawork by Freddie Young, BSC.

proved instrumental in getting Morris released by a reluctant RAF, creating an opportunity for him at Pinewood Studios. Thus, Morris found himself back in the industry, working as an operator with Oscar-winning cameraman Guy Green, BSC on such major productions as *Blanche Fury, Oliver Twist* and *The Passionate Friends*, the latter two directed by David Lean.

Inspired by Green's artistry, Morris was keen to make the break into lighting himself. Once again, an opportunity was provided by Neame, who was preparing to direct his first film. Shot partly on location in Tunisia, *The Golden Salamander* proved to be a demanding debut for Morris, who was keen to make an impression. He recalls, "I wanted to try and give the film a style, so I decided to overcorrect the skies the way the Mexican cameramen did, by using a red filter." When studio officials back in London reported that leading actor Trevor Howard didn't appear to have any lips in the rushes, Neame asked Morris which filters he was using and instructed him to exchange his red filter for an orange one. This taught the ambitious neophyte an important lesson: "I had fallen in love with the backgrounds rather than paying attention to the actors."

Morris worked hard on a number of modest features, including *The Card* (with Neame), and he soon attracted the attention of American director John Huston, who was preparing to shoot *Moulin Rouge* at Shepperton Studios. Even though this was only his second color production, Morris made full use of the opportunity to break with the conventional approach to Technicolor. "One of the things I was determined to do was to break down this awful, garish color. The best way to do that was to put fog filters on the camera and fill the set with smoke. This obviously clicked with Huston, because he thought it was great."

A problem arose when representatives from Technicolor, who were notoriously conservative when it came to any attempt to experiment with their famous process, refused to accept any responsibility for the look of the film. But Huston stuck with his young cinematographer, and his faith was vindicated by the numerous plaudits the film gained for its technical achievement. "We even received letters from Technicolor stating how proud the company was to be associated with such a major breakthrough in color cinematography," says Morris.

The partnership between Morris and Huston was cemented on a number of subsequent features, including *Beat the Devil* (a send-up of Huston's own *Maltese Falcon*); *Moby Dick*; *Heaven Knows, Mr. Allison* and *The Roots of Heaven*. *Moby Dick*, adapted from Herman Melville's classic novel about a great white whale (see *AC* September 1956), proved to be as innovative in its approach to color as *Moulin Rouge*. The visual inspiration was derived from old whaling prints, and the filmmakers hunted for a way to achieve the desired etching effect. "They were about to start the film, and we still hadn't come up with an acceptable process," Morris remembers. "We tried to get an outline effect around the negatives, but we couldn't do it. Then one day, I went into Technicolor's office and happened to see a television print of Laurence Olivier's *Richard III* being run with

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A Man for All Seasons

Right: Morris (atop train, at right) and other crew members assess the damage after staging a locomotive crash for *The Seven-Per-Cent Solution* (1975). To capture the sequence, a camera (and assistant) were mounted on the front of the engine. Bottom: An all-star lineup of actors and filmmakers was assembled for the 1961 adventure epic *The Guns of Navarone*. From left: producer Carl Foreman, director J. Lee Thompson, actors James Darren, Gregory Peck, Anthony Quinn, Stanley Baker and David Niven, and Morris.

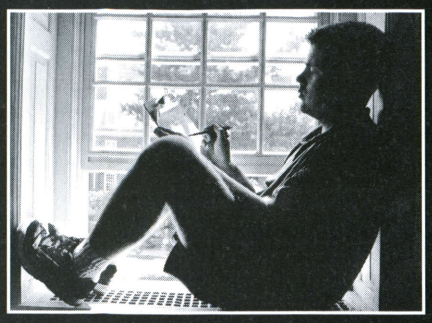
washed-out, soft, pastel colors. In those days, they had to knock the contrast down for television." In order to retain a hard edge and strong blacks in the image for *Moby Dick*, a black-and-white register was incorporated in the final printing.

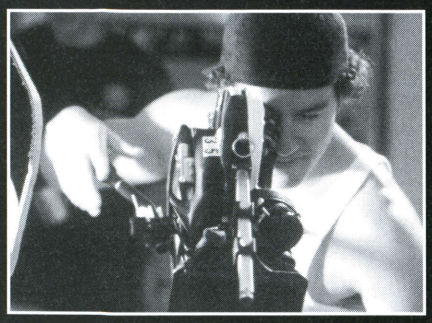
In addition to these experimental color productions, Morris was also developing his skills in black-and-white. Prior to the 1950s, British cameramen were considered to be specialists in either color or black-and-white, but now the challenge was versatility. With the introduction of various widescreen systems, cinematographers also had to be adept at using different picture formats. Morris's first experience with CinemaScope was on the 1955 feature *The Man Who Never Was*, directed by Neame. The connection with Huston led Morris to be invited to Rome to work with the Italian master of neorealism, Vittorio De Sica, on *Stazioni Termini (Indiscretion)*. Producer David O. Selznick was unhappy with the way his wife, Jennifer Jones, and her co-star, Montgomery Clift, were being photographed, and Morris was given the task of shooting all of the close-ups. (The problem was that De Sica and his cameraman, G.R. Aldo, were using a 30mm lens for everything, resulting in unflattering distortion in the close-ups.)

Rather more demanding was *Knave of Hearts*, directed by Rene Clement of France. This minor classic features some innovative location cinematography, including shots of leading actors Gerard Philippe and Joan Greenwood that were captured on the busy streets of central London with concealed and handheld portable cameras. "Freddie Francis would sit with an Arriflex camera over my shoulder, and I would read the newspaper," Morris recalls. "We didn't have Walkie-Talkies in those days, so it all had to be done with signals. On a given signal, we would start the camera, Rene would cue Gerard, I would drop the paper and Freddie would carry on over my shoulder. The minute the shot was over, I would put the newspaper up and carry on reading." The film's studio sets were constructed with a fourth wall to create a greater sense of spatial reality for the actors.

This achievement led Tony Richardson to invite Morris to shoot *Look Back in Anger* and *The Entertainer*, two films that ushered in a new wave of hard-edged, working-class realism in British cinema. The last few years before black-and-white cinematography was effectively eclipsed by color proved to be particularly creative for Morris. In 1961, he photographed Stanley Kubrick's acclaimed adaptation of Vladimir Nabokov's *Lolita*, starring James Mason, Peter Sellers and Sue Lyon; Morris's work gives this story of a relationship between a middle-aged man and a young girl an appropriately romantic quality tinged with an underlying sense of corruption.

Even more impressive is *The Hill*, a tough and gritty World War II drama set in a British prison camp in North Africa, directed by Sidney Lumet and featuring an all-male cast led by Sean Connery. While shooting on location in Almeria in southern Spain, Morris adopted a boldly experimental approach to the visuals, underexposing the film by a stop during shooting and compensating in the developing to produce a suitably hard and brittle look. "We used no fill lights, so you couldn't see the eyes of some of the actors," he explains. "The windows burned out, and the sand was hot and overex-





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A Man for All Seasons

This special rig was built in the hills of Ravello, Italy to facilitate a camera move for the 1954 film *Beat the Devil*, directed by John Huston. Behind the camera are Morris and operator Freddie Francis.

posed." The dramatic centerpiece of the film, the artificial hill which the prisoners are forced to run up and down while wearing full gear in the blazing sun, is dramatically introduced in an opening crane shot.

Morris continued to demonstrate his versatility as a cameraman by taking on epic action adventure in *The Guns of Navarone*, suburban claustrophobia in *The Pumpkin Eater*, the romantic glamor of *The Battle of the Villa Fiorita*, the Cold War thriller *The Spy Who Came in from the Cold* and Franco Zeffirelli's lush adaptation of *The Taming of the Shrew*, which starred Richard Burton and Elizabeth Taylor and featured imagery inspired by the aesthetics of classical Italian painting.

In the late 1960s, Morris once again moved into new territory: musicals. His first was *Stop the World — I Want to Get Off* (*AC* March 1966), a production featuring the multi-camera Mitchell System 35. This was followed by one of Morris's most successful productions, the Oscar-winning *Oliver!*, which was his third collaboration with acclaimed British director Carol Reed (after *The Key* and *Our Man in Havana*). One of the most accomplished British screen musicals, *Oliver!* allowed Morris to draw upon his earlier experiences on Lean's production of *Oliver Twist*. But he was also continuing to learn. "The musical numbers are all separate units," Morris explains. "The choreography is based on the music and the lyrics of the original play. It is a totally different way of making films; continuity girls have to be able to read music to know when a cut is coming, because you have to cut on bars of music."

A number of similar productions followed, including *Scrooge*; *Goodbye, Mr. Chips* and *Fiddler on the Roof* (*AC* December 1970). *Fiddler*, for which Morris won an Oscar, afforded more opportunities to experiment. "We were on location in Yugoslavia, and I found that the lovely, rich, brown soil got into everything; all of the houses were that color, [as well as] the dresses the peasants wore. I therefore decided to shoot the film through a silk stocking to get that [quality] onto the screen. The director, Norman Jewison, saw the test we had done, and was delighted with the results." Many of the sequences in *Fiddler* were shot at dawn or dusk, lending the imagery a soft, pictorial quality.

During the 1970s, Morris continued to excel, collaborating with first-rate directors and actors on a range of projects. He worked with Joseph Mankiewicz on *Sleuth*, a two-hander starring Laurence Olivier and Michael Caine, and also became involved in the long-running James Bond series, stepping in on *The Man with the Golden Gun* when regular 007 cinematographer Ted Moore, BSC, became ill. In 1974, Morris was reunited with his mentor, Ronald Neame, on the thriller *The Odessa File*. Morris also consolidated his connections with the other two important directors in his career, John Huston and Sidney Lumet.

The Man Who Would Be King was his final collaboration with Huston, with whom he had made

eight films. A ripping yarn based on a Rudyard Kipling story and featuring Sean Connery and Michael Caine as a couple of adventurers, the film features some breathtaking location photography, with the Atlas Mountains of Morocco standing in for the foothills of the Himalayas.

Morris collaborated with Lumet on three productions in quick succession: *Equus*, *The Wiz* and *Just Tell Me What You Want*. These pictures afforded still more opportunities for innovation, particularly with color effects. In *Equus*, color is used subtly and expressively to convey the deranged psychic state of a young man who has unaccountably blinded several horses. In *The Wiz* (*AC* November 1978), an all-black, musical version of *The Wizard of Oz* that features Diana Ross and Michael Jackson, a richly enhanced tonal palette is central to the creation of the fantasy world of Oz in New York City. Morris made creative use of the Lightflex, an on-camera device designed by Gerry Turpin, BSC, to provide a wash of color over the image. The Lightflex was used to create a rainbow effect and helped transform the Manhattan locations, including the Emerald City set on the plaza of the World Trade Center. This set was illuminated at night by some 27,000 red, green and gold lightbulbs, which were placed beneath a Perspex floor, allowing the dominant color to be changed as the sequence progressed.

Ever hungry for a new creative challenge, Morris began the 1980s by photographing two films featuring animatronic creations from Jim Henson and Frank Oz's puppet workshop. *The Great Muppet Caper* was an anarchic comedy centering on the attempts of Kermit the Frog and Fozzie Bear to solve a jewel robbery. *The Dark Crystal* (*AC* December 1982) was a more complex and ambitious production, a dark fairy tale featuring a weird and wonderful array of imaginary crea-

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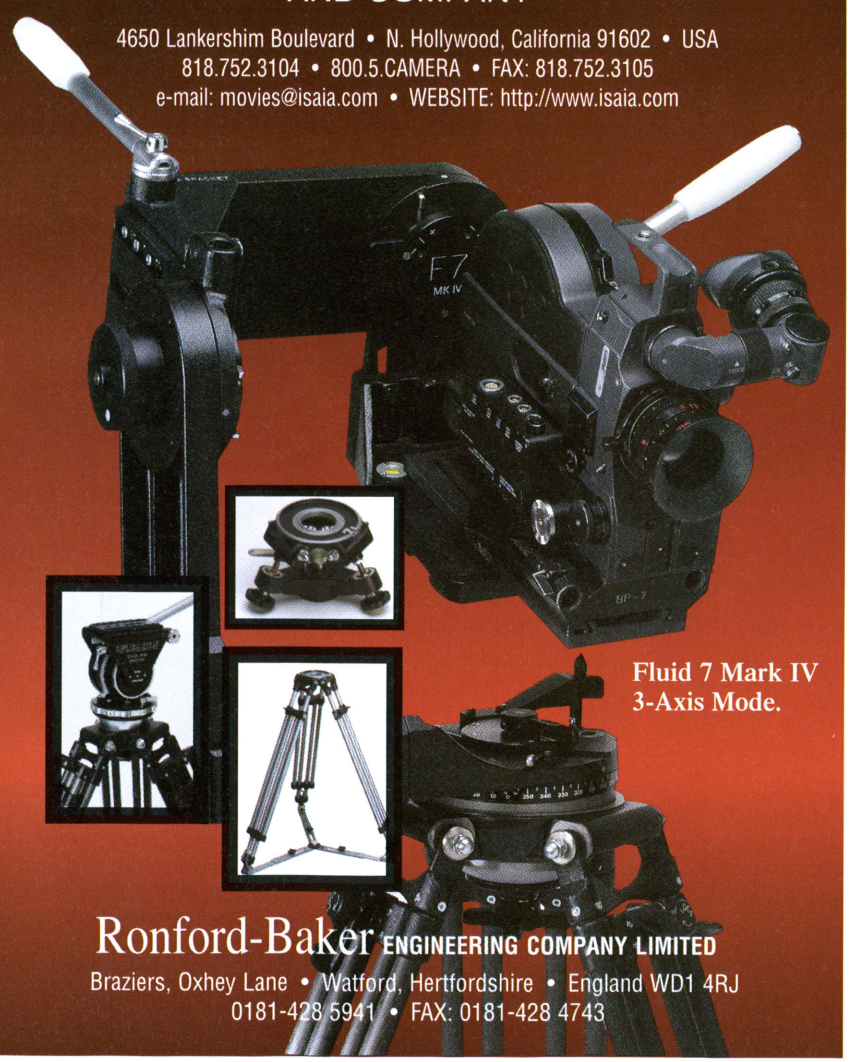

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A Man for All Seasons

tures. In addition to using light to help bring the animatronic creations to life, Morris was faced with problems of scale — the various characters ranged from 39 inches to seven or eight feet — and the need to maintain the necessary depth of field on the large studio sets. Consequently, *The Dark Crystal* proved to be one of the most difficult and demanding challenges he had faced.

At the very pinnacle of his career, Morris decided to retire. "I felt that I had done everything I was capable of doing in some shape or form," he says. "I felt that after the two Muppet films, everything I was being offered I had done before. And I thought I'd rather not do run-of-the-mill stuff. I'd seen cinematographers go downhill and be employed out of sympathy. I couldn't do that, so I decided to end it there, and I'm glad I did."

Since hanging up his light meter, Morris has remained closely involved with the craft he has done so much to promote, teaching at the National Film and Television School, giving workshops around the world (see *AC* April 1985) and remaining an active member of the BSC's Board of Governors. "I guess I'm the English equivalent of Stanley Cortez, who stayed on the ASC's Board of Governors until he died," Morris points out. "I've kept in touch."

This ongoing engagement has kept Morris up to date on a variety of developments that have occurred in cinematography since 1982. He's been particularly impressed by improvements in film stocks, which he feels have afforded cinematographers a vast array of new creative possibilities. "The subtleties of film, the latitude and quality, are breathtaking," he states. "I am green with envy when I think of the problems we had on an early Eastman color film like *Moby Dick*."

Morris also finds the latest developments in digital postproduc-

tion techniques to be remarkable. "In my day, you could not really transfer to tape and come back to film without saying, 'Oh, God, that looks awful.' But they can now transfer an image onto the computer to work on it and then bring it back to film, and you will not be able to see any difference in the quality."

A die-hard supporter of celluloid, Morris believes the image quality and latitude of current stocks will ensure that major features will continue to be shot on film for the foreseeable future. But far from being dismissive of new digital video technology, he is enthusiastic about developments that have improved his ability to help the younger cinematographers who seek his advice. "Some of them know more about my films than I do, and thanks to laserdiscs and DVDs, I can locate the sections that they want to talk to me about. I enjoy doing that."

These technologies have also contributed to ongoing restoration programs by various institutions, including the National Film and Television Archive. "I saw *The Card* at the National Film Theatre a few years ago, and Ronnie Neame and I went up on stage to talk about it," Morris recalls. "Honestly, it was as good or even better than the original. This program of restoration is expensive, but it is crucial if our cinematic heritage is to survive."

Morris continues to keep an eye on younger cinematographers, and among those he singles out for praise are BSC members Phil Meheux and Remi Adefarasin. "I saw the remake of *The Mask of Zorro,* and I thought that was beautifully photographed [by Meheux]," he opines. "I also thought that Remi lit *Elizabeth* very imaginatively. It was a fresh approach to a period picture — Remi was working with a limited budget, but he had a very talented director. The camera was always flowing like a gondola, slowly moving around all the time. It lent

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the film a lovely feeling."

However, Morris is also forthright in his criticism of certain developments in contemporary cinematography. As someone who was by the end of the 1940s one of the top operators in the British Film Industry, and who subsequently worked with a number of operators who went on to become major cinematographers (such as the BSC's Freddie Francis, Arthur Ibbetson and Denys Coop), Morris has very strong views about the current trend in Britain of combining the roles of lighting and operating. "I think this is a disastrous step, and the industry is sacrificing artistic quality by doing it," he maintains. "I would never have been able to operate and light; I simply couldn't do it. I hope that eventually sanity will prevail and we will go back to the idea of a separate operator. I just don't know how any cinematographer can light the set properly, watch the action and watch the lighting while he is shooting and operating the camera."

Morris is also concerned about cinematographers being forced to work excessive hours on productions, something he attributes to the inability of many technicians to command the respect and influence on a production that members of his generation did. "The feeling I get is that young people come onto the unit as a member of the unit, and they stand there and wait to be told what is what and then do it. They begin to get behind schedule, and therefore have to work longer hours. If these younger people can maneuver themselves into a position where they are respected, then others will listen to their input. This is something the film schools never teach anyone, but it certainly existed when I was working. I got respect on every picture I did. I cared about the film, and I was very conscious about the money side; I quickly learned that speed is the essence of movies — if you can knock a couple of days off the schedule, you can save the company a lot of money."

Morris's solution to the problem is encapsulated by the use of a term derived from Neame: executive cameraman. "An executive cameraman is someone who cares not only about the visual aspect of a picture, [but also] about the budget, the efficiency of the production, the actors and the director," Morris explains. "An ordinary cameraman cares purely and simply about the visuals and will do very efficiently and creatively what he is told to do, but that is it. We need more executive cameramen in the industry. Freddie Young was a great example. He would get involved with everything on the set

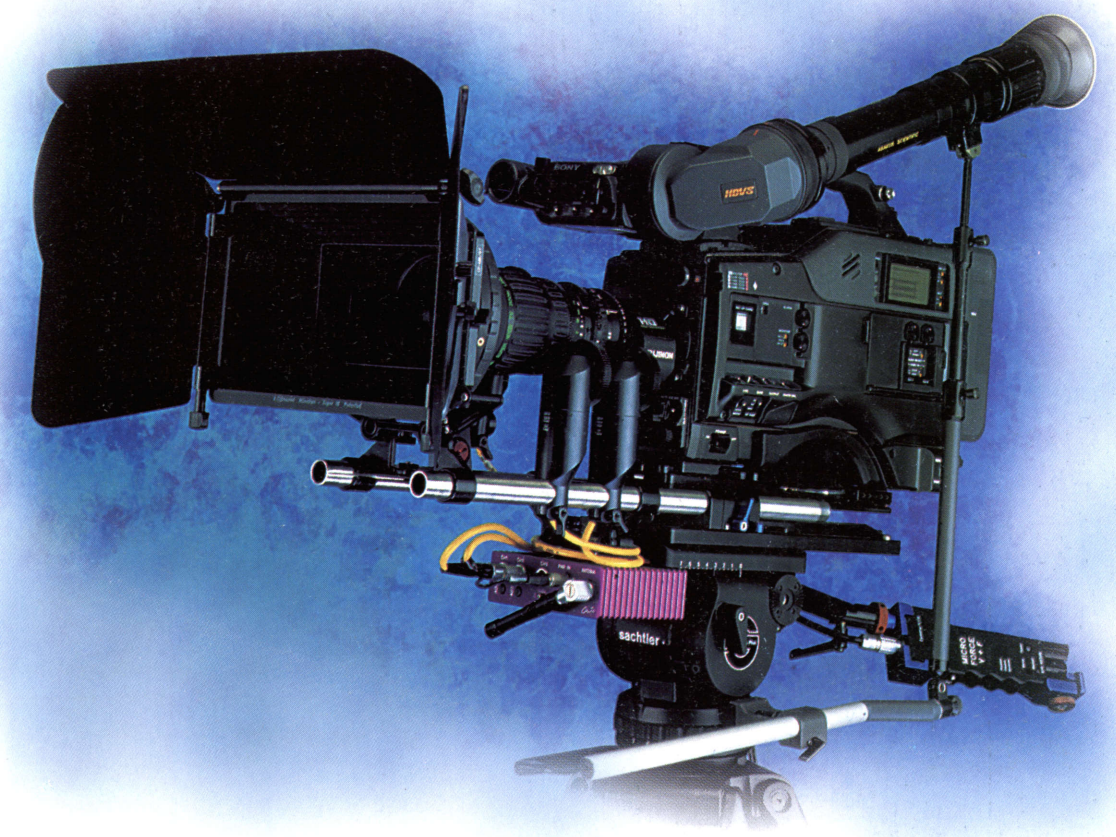
— if he saw the painter, he'd say, 'Give me the brush I'll show you how to do it.' Sadly, the film schools don't seem to understand that."

According to Morris, one underappreciated aspect of a cinematographer's role is the ability to work with directors and actors, which involves a great deal of patience, understanding and charm. As Morris puts it, "The heart of the movie is built around relationships on the floor. There are three basic types of director: the director who can direct actors beautifully but doesn't know where to put the camera; the director who is also a screenwriter and is primarily interested in his words and dialogue; and the director who is brilliant at the technical side but ignores the actors. A good cinematographer has got to be able to handle all three.

"Joe Mankiewicz was a director who was wonderful with actors. He would rehearse a scene and turn to me and say, 'What do you think?' Joe didn't know where to put the camera, but I would always say to him, 'Do you think it would be a good idea if we put the camera here?' What you never say is, 'We will do this and that.' The cinematographer must never usurp the position of the director. This is very important: [the cinematographer] is number two on the floor, not number one. He must never do anything to undermine the director in the eyes of the unit."

The same care and consideration applies to the cinematographer's dealings with actors. "When I started a film, I would go to the leading lady and say, 'We are going to do some tests. Is there anything you want to tell me about yourself?' Sophia Loren was a classic example. She said, 'All I ask is that you try not to shoot me in profile.' She felt that in profile, her nose and lips were not attractive. So I told her whenever she went into profile to look at me, and I would signal her to turn slightly. It is very important to keep someone like Sophia Loren happy. That's not strictly lighting a set, but it is helping people to make a good movie."

When Morris began teaching at film schools in the early 1980s, he found an emphasis on training students in documentary technique. For Morris, this trend, which involved enhancing natural light or recording a pre-existing reality, failed to capture the essential creativity at the heart of his craft. "The wonderful challenge we had in the old days began when we got to the studio in the morning. In that studio was the most beautiful set that had ever been designed, but it was pitch black. My job was to light that set and bring it to life. That is the magic and the wonder of moviemaking, from my point of view." ■



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Angry Red Planet

Director Brian De Palma and cinematographer Stephen H. Burum, ASC reteam to launch *Mission to Mars.*

by Ron Magid

Unit photography by Rob McEwan

NASA finally evens the score with the red planet in *Mission to Mars,* a new sci-fi adventure directed by Brian De Palma. In the film, the first manned expedition to Mars meets with a catastrophic and mysterious disaster, much like the most recent robotic probe launched in real life. Naturally, the movie version of the U.S. space program has the funds to launch a follow-up mission, whose astronauts are ordered to investigate the tragedy and rescue any survivors.

De Palma's latest picture promises an exciting, realistic depiction of space exploration in the next century, as actors Gary Sinise, Don Cheadle, Connie Nielsen, Jerry O'Connell, and Tim Robbins portray astronauts confronting nearly insurmountable dangers on the urgent Mars Recovery mission.

"Insurmountable" is a term that rarely passes between De Palma and his longtime collaborator, cinematographer Stephen H. Burum, ASC. However, it might have sprung to the duo's minds a few times during their initial meetings about *Mission to Mars,* a project that also lent new meaning to the phrase "logistical challenge."

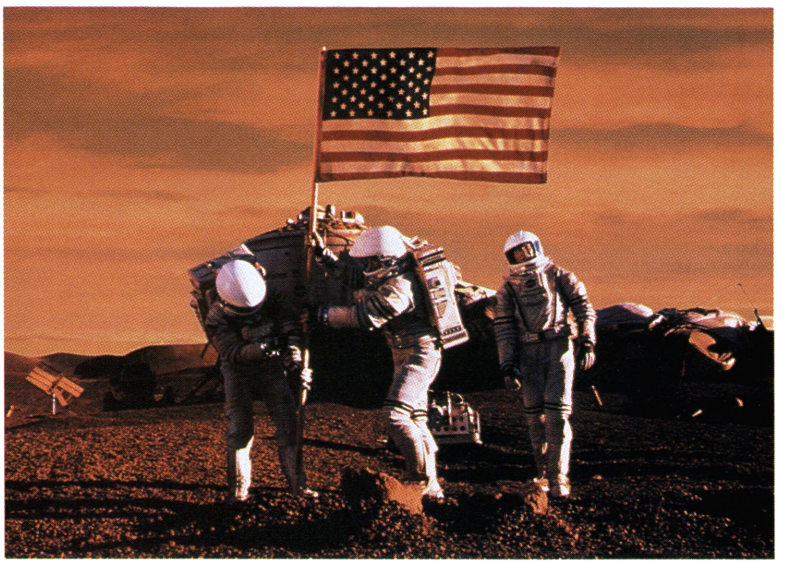
Mission to Mars marks the pair's eighth collaboration. Their previous work together includes the 1987 gangster epic *The Untouchables* and the 1996 action blockbuster *Mission: Impossible.* In addition to his work with De Palma, Burum has photographed the stylish films *War of the Roses* and *Hoffa* for actor/director Danny De Vito, among other pictures. Although the cameraman is no stranger to the rigors of digital effects filmmaking, nothing in his lengthy filmography, which also includes such effects-heavy productions as *The Shadow* and *Mystery Men,* quite prepared him for the rigors of filming on Mars. But, as Burum notes, "When I was starting out, I did a kid's TV series set in space for Sid and Marty Krofft. It was called *The Lost Saucer,* and it starred Ruth Buzzi and Jim Nabors."

De Palma's insistence that *Mission to Mars* be handled as realistically as possible demanded an accurate re-creation of the Red Planet's surface. "Originally, everybody wanted to do the exterior of Mars on a big interior stage so we could control the color of the sky and everything else," Burum says. "We were shooting the film in Canada, however, and there wasn't a big enough space there to do that. Instead, we had to bite the bullet and say, 'Well, the only way we can do this physically — and the only way we can afford to do it — is to shoot outside!'"

The production found a 70-acre landfill in Vancouver, which the crew soon proceeded to transform into the Martian landscape. "We literally brought in hopper cars full of these small, red-colored volcanic rocks, like the type you would use in a barbecue, from the mining area up in Manitoba," Burum recalls. "The great thing about those rocks, which production designer Ed Verreaux found for us, was that they didn't crush easily. When you have people moving equipment around in that type of shooting environment, the ground gets all tracked up. Even so, we had a whole crew of people just to rake everything and put more rock down. There were also a lot of trees around the landfill, and the wind blew a lot because we were close to the ocean, but we solved both of those problems by building up these artificial berms. We then put a very thin layer of 'shot-crete,' which is like gunite, over our artificial mountains, which we painted the color of Mars."

Various setpieces, including the "Hab," the first mission's habitation unit, and the huge Martian "Face," a mountain resembling a human visage, were built atop the red briquettes comprising the planet's surface. The ideal positions of the sets were determined using Global Positioning Satellite information and a computer program called Sun Path. "We figured out a four-week window in which we wanted to shoot the Mars exterior," Burum explains. "Then we used Sun Path to tell us exactly where the sun was going to be at a certain time of day, how high it would be, and how it was going to track. Once we had those factors calculated, we laid out the set so it would be the best for us in terms of the sun's position. We oriented our sets north-south and east-west so that we always had good cross-lighting in the morning and afternoon. Since the Mars surface was just a barren plain, we could shift our whole operation around 45 degrees, and it didn't make a difference as long as the sun angle was correct. We'd start out in the morning shooting toward the east, then we'd shoot towards the south so everything would be backlit and all of the texture on the ground would show. After that we'd shoot north. The sun was fine on everything; we'd just work our way around the location during the day so we always had the best light."

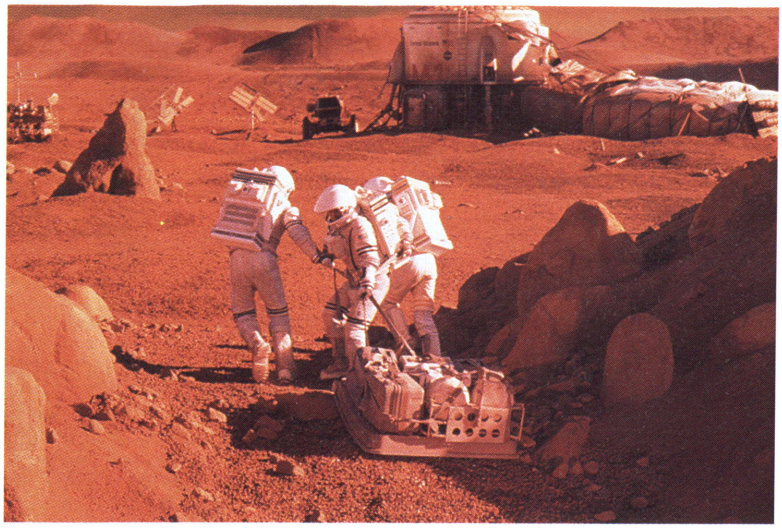
Having plotted the position of the sun throughout the shoot, Burum subsequently faced a far more demanding challenge: changing the skies from Earth blue to Mars red. "The sun on Mars is the same color as the sun is here, but it's a bit weaker," Burum notes. "According to the people at JPL [Jet Propulsion Laboratory], the atmosphere looks



Opposite: U.S. astronauts explore the surface of Mars. Cinematographer Burum explains that he "made everything in space look neutral, and everything on Earth look cool, blue and green. That way, when you see Mars, the red really hits you, like 'Wow! We're really in a different, strange place!'" This page: Our boys plant the flag.

Photos courtesy of Touchstone Pictures.

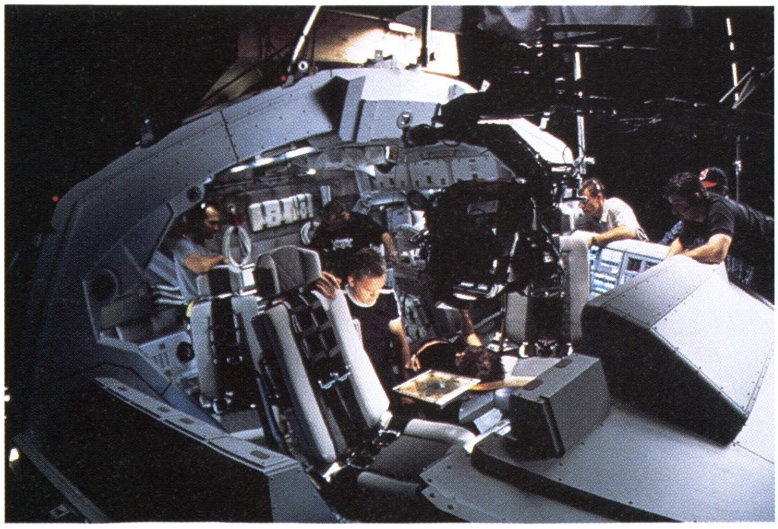
Angry Red Planet



Right: The mission gets underway. After a period of trial and error, Burum covered his movie reflectors with copper foil to lend the planet's shadows the proper hue. Below: Actor Tim Robbins examines the cockpit of his spacecraft.

like a smoggy day in Los Angeles. When we started shooting tests in the Mars environment, the sun was okay, but the shadows were *blue*. DreamQuest did a series of tests to turn the whole environment a red color. They tried filters, they tried shifting the film with printing, and so on, but the problem was that these approaches not only changed the shadow area, they changed everything else, and suddenly the spacesuits didn't look white. They even tried using Ultimatte's Knockout System to isolate the shadows only. This all seemed like overkill to me. Finally, I said, 'Wait a minute. The problem is that we've got blue shadows, right? What can we do just to fill those in?' I finally got one of those red space blankets and used it like a reflector, and we shot a little test out at DreamQuest with somebody in a white spacesuit — and it got rid of the blue! The trouble was, we couldn't use a bunch of red space blankets because they had to be too close to the subject. We needed something with a bit more punch.

"Then one day, I was watching one of these PBS home-improvement shows where they were putting on a copper roof, and I said to myself, 'Wait a minute, that copper looks pretty good!' We got some copper sheets and they seemed to work pretty well, but then we got some copper foil from an art store and covered our ordinary movie reflectors with that, which worked great. We were able to place them just outside the shot, like you would with normal reflectors on a regular shoot, except they turned the shadow areas this coppery color! When we were shooting outside, I had eight reflectors and two HMI booster lights — and that's it. People always think that computers are the answer to everything, but we were able to use low-tech techniques to solve a high-tech problem."



Another photographic problem was presented by the space helmets worn by the actors. The headgear was originally very faithful to the genuine NASA article, and reflected the entire environment, including Earth's blue skies. "We did a test out at Vasquez Rocks and determined that no matter what we did, we were going to get these unwanted reflections from any standard NASA helmet," Burum says. "We therefore decided to redesign the helmet. We enclosed the top so it didn't reflect the sky, angled the faceplate down so it reflected the ground, and cut the sides of the helmet back because Brian likes to shoot profiles. After taking those steps, the only thing that you saw reflected in the faceplates was whatever was on the sides — so we made these great big panels of rip-stop nylon that we dyed the official Mars color, and if somebody turned their helmet, the panels would reflect off the sides as if you were seeing the Martian sky low on the horizon. That saved us an enormous amount of trouble."

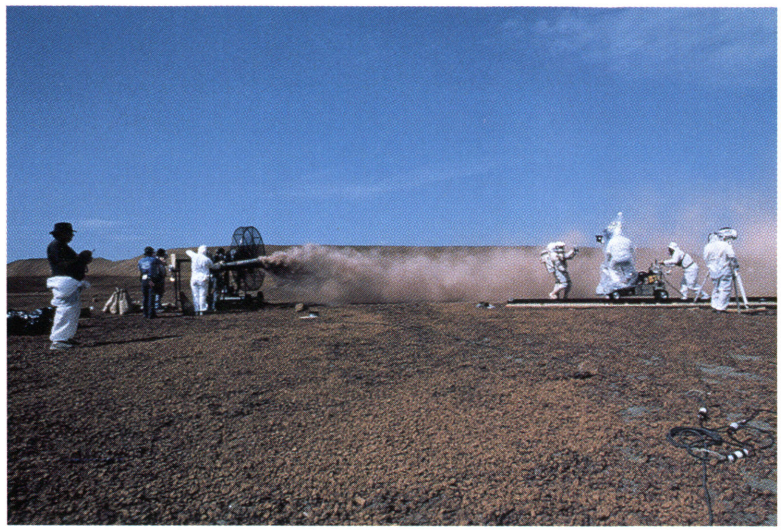
All in all, Burum's Earth-for-Mars techniques proved to be an elegant solution to a complex series of challenges. "It really worked out a lot better than we thought it would," he admits. "At first, all we could see were the problems, but once we had the basic concept down, the only thing we had to do was replace the sky."

Although Burum achieved as much of the film's look as possible

in-camera, computers were used to track the motion of shots to help automate the sky replacement. This necessitated the use of Kodak's 200T SFX visual effects stock for the Martian exteriors, and in most other instances where effects were to be added. "We wanted all of the lines along the top of the berms to be as sharp as possible so the effects houses wouldn't have to do any hand-work on them," Burum says. "We also used SFX whenever we had wire removal or matting, because it's just a lot better for those things. With most film stocks, when you approach the high and the low end of the scale, the exposure curves aren't exactly parallel; they go off one way and another, so there's a color shift. It's very important that the color tracks when you do effects work, because the whole name of the game is 'the edge.' The SFX gave us great edges."

Burum notes that he also used Kodak's EXR 5293 stock for one early scene (a party staged on Earth), and Vision 500T 5279 for any stage work that didn't involve visual effects.

As he usually does on a project, Burum filmed all of the background plates for the effects shots, which meant that he was alternating between VistaVision and 35mm anamorphic formats. "Because there were so many effects, at least half the picture was shot in VistaVision, so I had two VistaVision cameras and two Panavision Millennium cameras," Burum reveals. "I was able to swap them into the same setup with the same lighting, because I'd always light for the highest level I needed; I never had to change anything. I chose to shoot a lot of VistaVision to get the maximum picture information, so that when the effects artists went in, it was a lot easier for them to maneuver and retain all of that fine detail. I think it's crazy to shoot in Super 35, which is only two perforations high, and [also] shoot four-perf. If you have something that's gross and the grain is huge, it just makes it much more difficult for the effects artists, and it doesn't look as good. That's one of the reasons we shot in VistaVision — they got even more to work with."



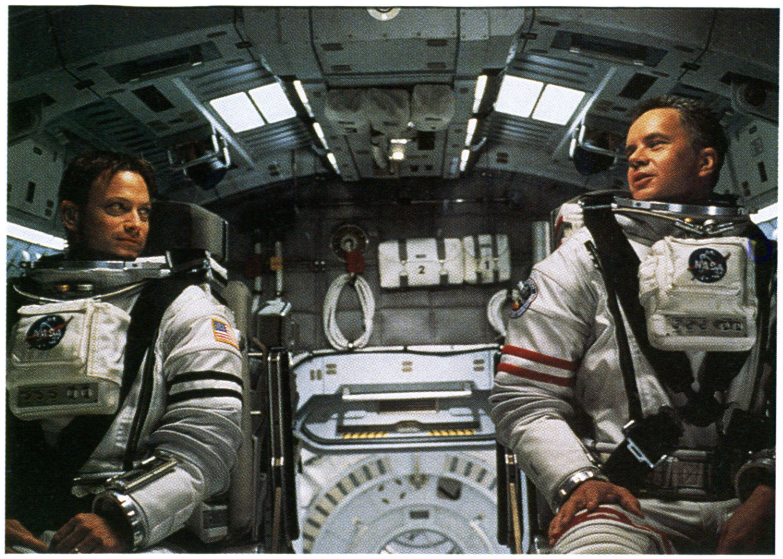
Left: On location in Vancouver, the crew creates a dust storm. Below: De Palma plots out a shot of actor Gary Sinise, as Burum (second from left) observes.

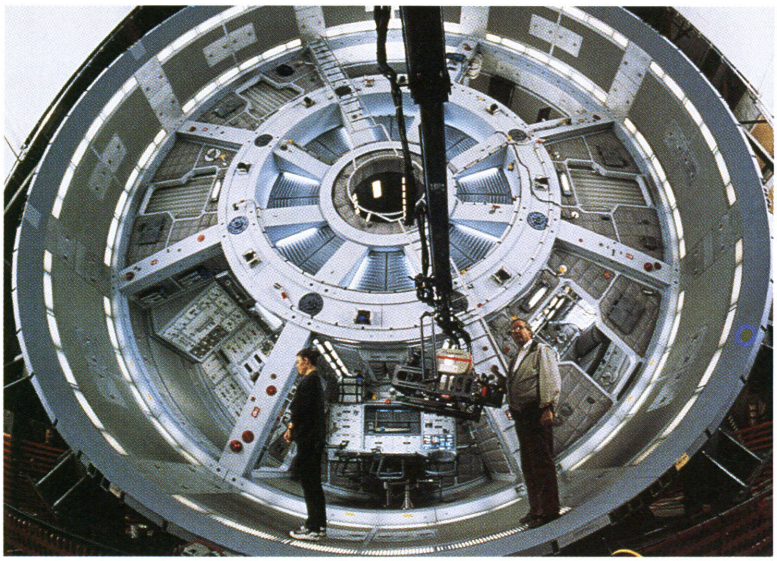
Burum adds that he shot the picture with Panavision's C-Series lenses "because they focus closer than the Primos."

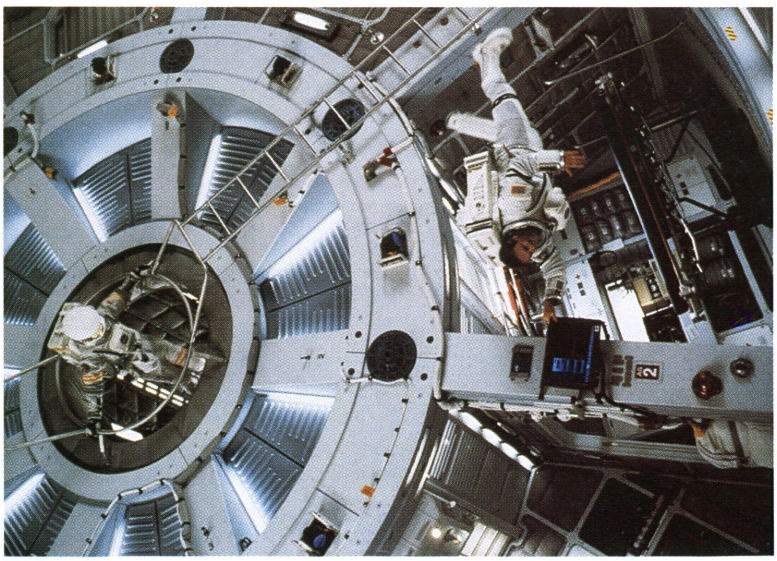
One of the film's key settings is a space station — a huge spinning ring that created its own gravity. Burum attempted to capture the claustrophobia of such an environment without sacrificing any of the visceral action. "Space stations are very small, but we had a corridor set that was about 80' long, and I made sure that you could see all of the walls," Burum says. "Brian wanted to follow the actors as they were walking through the corridors, but the set had all of these bulkhead dividers. That created some problems, because you can't have the Steadicam operator stepping over the thresholds. In order to do the Steadicam shots, we made the bulkheads very small, dovetailed them into the set so there weren't any visible seams, and constructed them so the bottoms could be pulled out. That way, once Steadicam operator Larry McConkey walked past the bulkhead, we would have a grip simply slide the bottom of the bulkhead back in, and the actors would step over it."

The massive Mars II recovery spaceship, which ferries the rescue mission headed by Tim Robbins and

Angry Red Planet







Top: Astronauts Jim McConnell (Gary Sinise) and Woody Blake (Tim Robbins) banter at the controls. Center: On the centrifuge set (which the crew dubbed the "Wheel of Cheese"), Burum (right) and a stand-in do a dry run with the telescoping Super Technocrane, which was equipped with a new four-axis head developed by Panavision Remote Systems (see diagram on page 56). This rig allowed the filmmakers to achieve some impressive perspectives (bottom).

Gary Sinise, is reminiscent in size, shape and certain architectural details to the *Discovery* spacecraft from *2001: A Space Odyssey*. The ship's cockpit and control rooms are at the front, while the propulsion systems are in the back. The living quarters, called the "Lower Hab," are connected via tubelike passages to a massive spinning centrifuge, the only area of the ship that has gravity. The production built almost the entire spaceship interior in several sections at Canada's Bridge Studio, which was once a steel factory. Although De Palma never asked Burum to move his camera through the spaceship from stem to stern (the sets were not interconnected), the cinematographer nevertheless had to confront a number of issues created by De Palma's obsession with making lengthy, fluid camera moves in these confined areas.

To achieve the director's vision, Burum relied almost entirely on a Super Technocrane equipped with a new four-axis head developed by Panavision Remote Systems. The unit, dubbed the Sideways, enabled the camera to pan up to 45 degrees left and right even when the camera was pointed straight up or straight down. "That rig was our *major* piece of equipment on the spaceship sets, and we built everything so we could get the Technocrane, which measured 3' x 4' with the four-axis head on it, through our shooting spaces," Burum confirms. "Normally, I'd bring the Technocrane in for special shots, but I would say that 85 percent of this show, maybe even more, was shot with it."

In characteristic De Palma fashion, many shots began in the spaceship's cockpit, then followed the actors out into other parts of the ship. As a result, Burum had to contend with a variety of difficulties. The actors were reeling off reams of dialogue, and they also had to appear weightless while moving through the various setpieces, which necessitated

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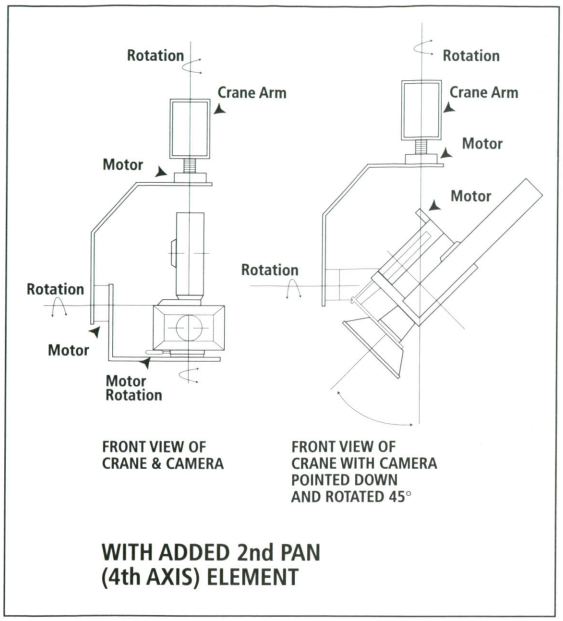

A diagram by Andy Romanoff illustrates the versatility of the new four-axis "Sideways" head from Panavision Remote Systems.

countless practical effects gags in addition to all of the other logistical issues. The cinematographer explains, "We did all of the simulated weightlessness, both in the spaceship and out in space, in two ways: we had the actors either puppeteered on wires or balanced on teeter-totters to get them to float. We also over-cranked [the camera] a bit to help create the illusion, and the actors made very deliberate motions as they pushed off one object and grabbed onto another while traveling through the sets. In addition, we always tried to make sure that the orientation of the frame didn't tell you where up or down was. We'd hang somebody upside-down in the frame and have other people right-side up, and then use the Technocrane's four-axis head to do a spinning forward move. We did as much of that as we could, because it really helped to convey the illusion of weightlessness."

Due to the necessity of wire and rig removals to pull off the weightless gags, these elaborate Super Technocrane moves usually had to be encoded for repeatability, adding another layer of complexity to the shoot.

Since the huge spaceship sets themselves were elevated on platforms, the Super Technocrane also had to be mounted on a platform. "If our actors were on elevated sets, we wanted the Technocrane to be at exactly that level so we'd have the least amount of arc in the crane arm. As a result, we were always moving all of these platforms," Burum recalls. "Brian would explain what he wanted to do, we'd rehearse it all with the stunt people on wire rigs to make sure we could pull it off, and then we'd figure out where the platforms had to go. After that, Brian would look at the shot with the stunt people, and if he said, 'Okay,' we'd put the actors in their spacesuits and shoot the scene."

All of the platforms, weightless rigs and other equipment tended to make lighting the spaceship sets cumbersome, so Burum and production designer Ed Verreaux planned to use as much in-set source lighting as possible — a technique that had served them well within the space-station interiors. Like those sets, the spaceship sets utilized a number of functional SGI flat-screen monitors and faux video screens. Burum details, "We wanted to light the space station and spaceship in a way that looked real, but we also wanted to be able to add a bit of drama to the look, so Ed and I incorporated all of the lights we needed into the design of the sets. It was all source lighting, except that we'd often remove the side or top of the set and drop the Technocrane straight down — in which case we had to simulate the lighting that was missing. We had a lot of back-projected video that had to be coordinated and balanced, and we knew we'd only get so much level out of them. We could only build up our light so much before we underexposed the screens, and that gave us our basic exposure. Basically, though, the whole thing was lit up by units that were designed into the sets, mostly fluorescent Kino Flos and small MR-16 units."

Burum maintains that the most demanding aspect of the entire shoot was filming within the 40'-diameter, fully functional centrifuge set, whose rotation presumably creates its own gravity. "That set was called the 'Lower Hab,' but we dubbed it the 'Wheel of Cheese,' because of its segmented sections," Burum says with a chuckle. "The problem was that it was set up 7' off the ground, so we needed an area to shoot in that was considerably high and pretty wide. Unfortunately, the Bridge Studio stage, where we built the centrifuge, was only 85' wide — which meant that given our 40'-diameter set, we had only 20' on either side of the Wheel where we could put lights and the Technocrane. The factor was that we couldn't light the Wheel from the outside, because when it was turning, you'd see the shadows turn as well. Once again, we lit it all from within the set, using Kino Flos and a lot of MR-16 lights for accent. Of course, we also had to deal with a whole range of issues, including video screens, while we were doing these incredibly long tracking shots through this big 'Wheel of Cheese.'"

The huge set actually rotated 360 degrees on massive hydraulic rollers. In effect, it acted like a giant treadmill, upon which the actors could walk in place. Burum explains, "We were out on the side on a platform with the Technocrane, so we were able to move the crane in and out of the set. We did one shot where somebody was walking along past people in all these rooms along the centrifuge. We had the actor walk in place on the centrifuge as all of the people in the rooms rotated past him. That meant that everybody who was sitting at the tables in the rooms had to be strapped in, because they were going to be upside-down at certain times. There were shots that started with the camera upside-down and the actors in the rooms

Continued on page 60

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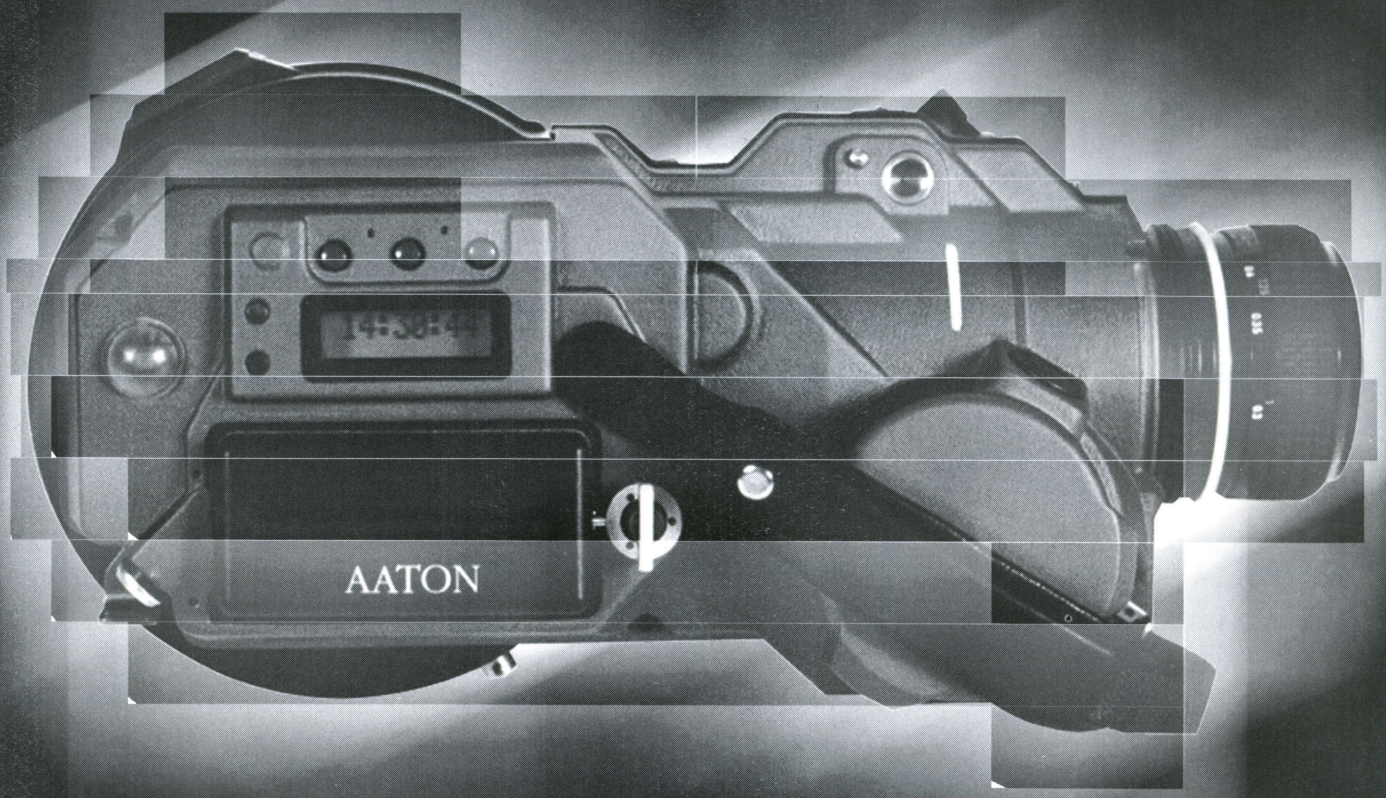

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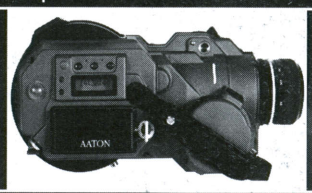

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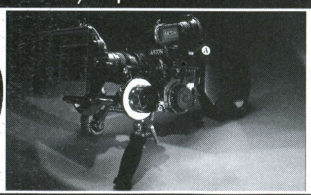

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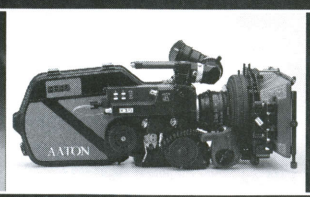

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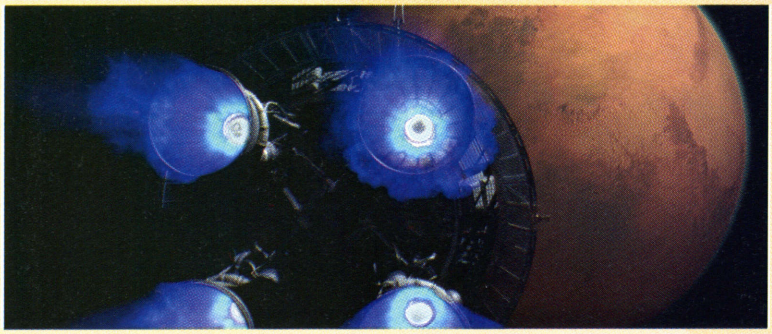
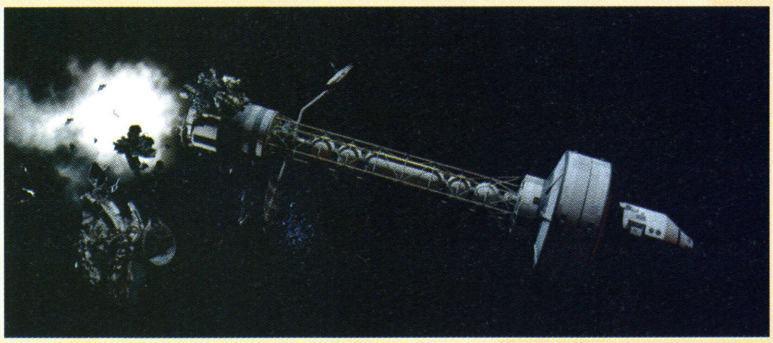
SPACE RACE

The visual effects team for *Mission to Mars* raced against the clock — and a competing project.

by Ron Magid

Composites by DreamQuest Images





Time was of the essence during the frantic postproduction phase of *Mission to Mars,* which Disney was determined to have in theaters well ahead of Warner Bros.' rival Mars flick, *Red Planet*. The competition forced Disney's in-house effects firm, DreamQuest Images, to split the work with Industrial Light & Magic (as they'd done previously on *Mighty Joe Young*), and to bring in Tippett Studios and a host of other houses as well.

"Because of the other Mars film, the production had an extremely aggressive, accelerated post schedule, and the number of shots also grew," says DQ founder and visual effects supervisor Hoyt Yeatman, who spoke to *AC* in the midst of the process. "We quickly realized that there was no way we could handle the types of sequences we were planning to do. Originally, the whole show was probably just shy of 200 shots, and now ILM alone has over 200 shots! We have about 140, Tippett's got 50, and there are a ton of wire removals, screen burn-ins and sky replacements, most of which are being handled by Henson, Cinesite and CIS. We did 400 animatics, not just of the effects shots themselves, but of the entire sequences. Basically, once the astronauts leave Earth in the first five minutes, it's a hardware film: everything you see is either manufactured or enhanced in some way, shape, or form."

DreamQuest's large workload involved some extremely CG-heavy sequences, so Yeatman chose to handle the Mars II recovery vehicle, visualized by production designer Ed Verreaux, as a highly detailed miniature. "We made the model as large as possible for the types of shots that we had, and yet just large enough so that we could get the wider shots that we wanted — it turned out to be about 21 ½' long!" Yeatman enthuses. "Then, Mike Sorenson from Source and Design built the biggest model-mover I've ever seen. We also built a digital replica of the stage, including a digital replica of the model-mover and the camera system; all our motion-control programming was done virtually, so we would plug the moves in on the stage, and the motion-control rig would shoot that move without any manipulation. That came in very handy when we were trying to dovetail with certain complex moves. For example, in one sequence, [director] Brian De Palma wanted to start in deep space, reveal the spaceship, fly up to and around the spaceship, then fly into a window and show the two main characters.

"We also built a virtual version of the Mars II that we used with the space station, which was an entirely digital model. That was the best way to go, since our craft was based on the International Spacestation, which has all of these delicate little details that would have been very hard to build in miniature. For the most part, though, we tried to do as much with models as possible, because I realized that we'd be spending a lot of digital energy creating the vortex sequence, which involved a lot of particle animation."

The vortex is unleashed when the first Mars explorers come across what seems to be a pinnacle of ice atop the red planet's famed "Face." When the astronauts drive their rover to the base of the mountain, they inadvertently set off a perimeter alarm that unleashes the vortex. "The vortex is a supernatural energy field that removes the Martian soil and the rubble around this mountain, and it takes the form of this huge twister that attacks the astronauts," Yeatman relates. "As the 'Face' is uncovered, the dust and debris is spun up into a giant twister that's several hundred feet high, which then keels over horizontally and becomes almost like a serpent on the ground. It's about 50' in diameter, and the audience will be

looking right inside its mouth."

DreamQuest's animation team created the vortex using the Hookah renderer that they initially designed for the particle "gas jets" shooting out of the meteor in Armageddon. "The technique of creating the gas itself was procedural," he elaborates, "but our animators have been working on Hookah to allow us to control those procedural elements via animation to create a character. It takes two different types of animators: a traditional animator animates the character, and then the Hookah procedural animators — called TDs — actually translate that into the final 'look' of the vortex. In other words, a traditional animator moves a series of concentric tubes to create the motion of the vortex, without knowing exactly what's happening inside the vortex. Then that position geometry goes to the Hookah animators, who add these multiple concentric tubes, which work within the Hookah software to control the forces inward, the forces outward, and the turbulence, to get the look or the behavior of the outside Hookah force. There is no solid form; using Hookah, we created this amazing, surf-like vortex that consists completely of a hundred million particles or more. It takes forever to render, and it's a mess to light, but the aesthetic is interesting and spectacular. I've never seen anything like it, which is pretty cool."

DreamQuest called in an unusual backup to help with the vortex sequence: Tippett Studios, an outfit mostly known for its groundbreaking character work on films such as *Jurassic Park* and *Starship Troopers*. On *Mars,* Tippett's wizards found themselves animating rolling rocks. "There really isn't a great deal of character animation, just a lot of rocks flying around," concedes Tippett Studios visual effects supervisor Brennan Doyle. "There's a sequence of shots in which one of the astronauts gets sucked into a fissure in the ground, so we've been ripping up the ground around the character and surrounding him with debris rolling along the ground. We created all of that using a lot of particle-type renders of rocks and dust. Of course, our rocks *do* have lots of character: some are happy, and some are not so happy!"

Ironically, it fell to ILM to create the film's climactic sequence, during which viewers do get a glimpse of a real-life Martian — in a way. When the astronauts venture into the exposed "Face" on Mars, they discover it to be a vast, featureless white environment leading to a huge rectangular black opening. As they pass into the blackness, they see a holographic planetarium display — a stylized three-dimensional textbook illustration of our solar system, replete with orbit rings. Hovering over the display is the stylized hologram of a female Martian, who proceeds to tell the story of her planet's destruction. "The astronauts notice that Mars does not look like the Mars of today; it looks a lot like the Earth, and in fact, it's the fourth planet out from the Sun," reveals ILM's visual effects supervisor John Knoll, who recently completed hundreds of shots for *Star Wars Episode I — The Phantom Menace.* "Mars gets struck by a comet, which creates a giant impact crater. The astronauts watch as the planet slowly dies and Earth takes its place. As they're observing all of this, they suddenly notice that they're not alone and that this Martian figure is with them."

The climactic sequence lasts a whopping 10 minutes and involved a CG-created environment, digital planets, and of course, a 3-D animated Martian — none of which was actually on the set during physical production. "We shot the actors on a set, but the set didn't really consist of much other than a velvet black backing and a black, shiny floor," Knoll says. "We then added a starfield behind them, plus the Sun and the planets. We created the

Continued on page 61

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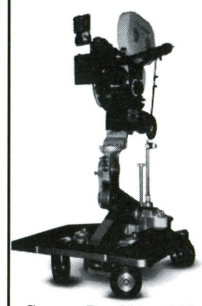
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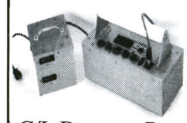
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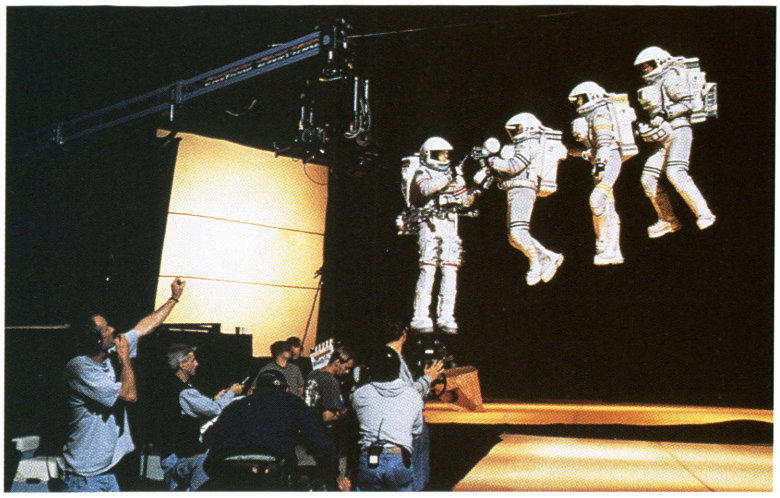

This page: Four astronauts are hung from wires as the crew shoots one of the film's "weightless" sequences.

right-side up, and then we'd bring them around till they were upside-down and kind of follow the tilt of the set. It was a very, very complicated thing to shoot, and it actually required two camera operators — one person to control the pan and tilt, and another to do the spin and shift on the fourth axis every once in a while. To make matters worse, sometimes we had people coming through the center of the Wheel, where there was a tube that connected the non-gravity area of the ship to the gravity portion. For those shots, we had to fly actors through the tube as if they were weightless, then 'change' to gravity as they entered the centrifuge, and then follow them as they climbed down ladders while the Wheel was rotating."

Despite the logistical challenges presented by *Mission to Mars*, Burum proudly reports that production wrapped 14 days under schedule. The cinematographer achieved a wide variety of looks within the film, while still hewing to De Palma's almost contradictory mandate: "Brian wanted to depict everything in a very realistic manner, but he also wanted to make Mars very romantic. Authors have written about Mars for years, and we wanted to fulfill audiences' expectations of what Mars looks and feels like. I wanted everything on Mars to look red, so I made everything in space look neutral and everything on Earth look cool, blue and green. That way, when you saw Mars, the red really hits you, like 'Wow! We're really in a different, strange place!'" ■

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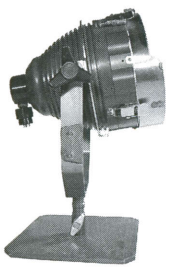

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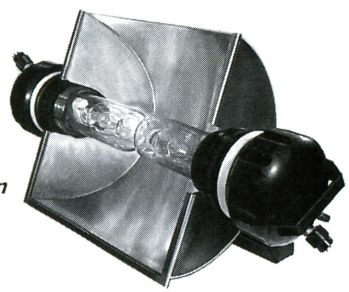

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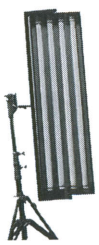

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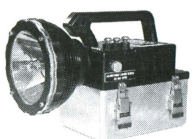

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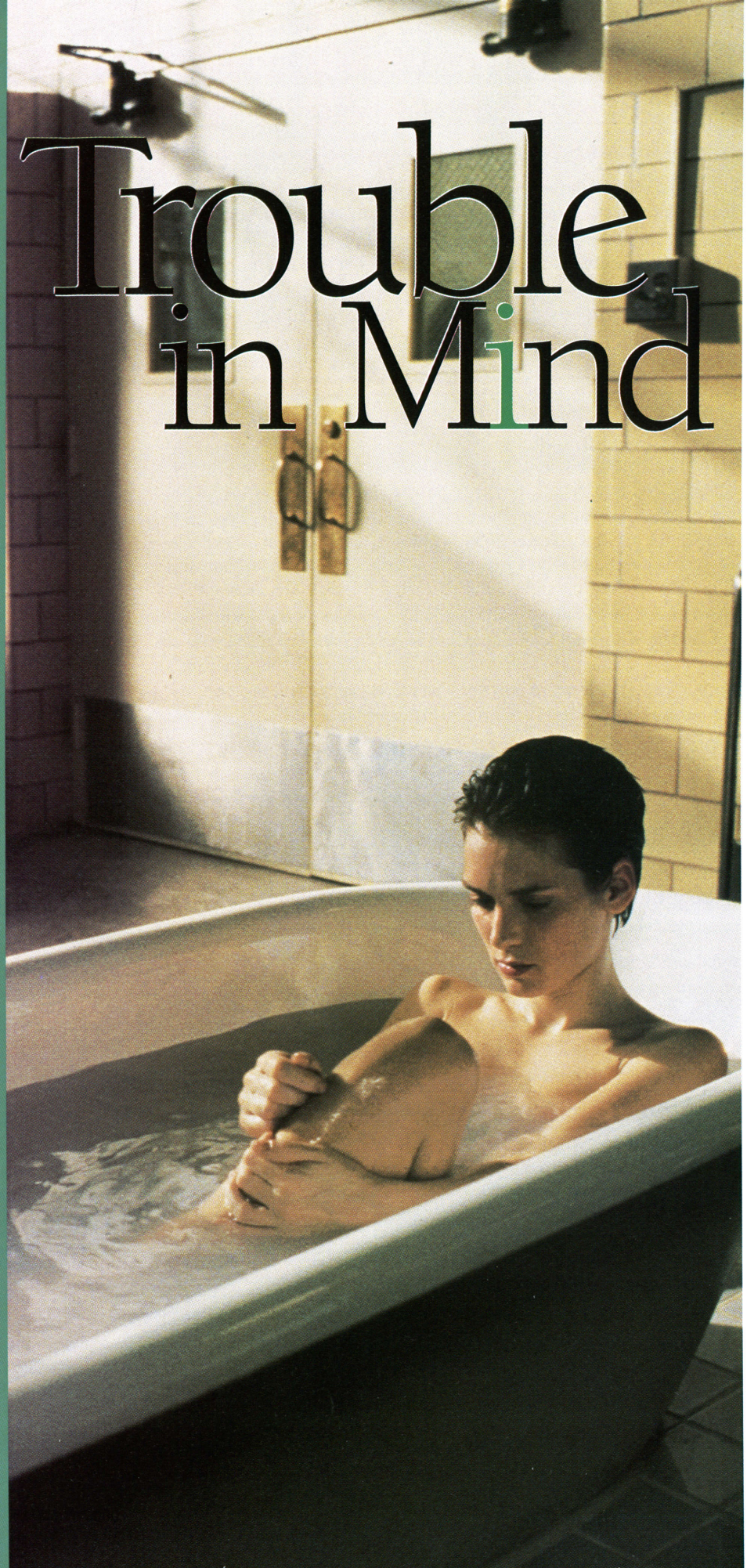
SPACE RACE — continued from page 59

destruction of Mars using particles, tricky Renderman shaders and various animated Maya elements. Maya's a really TD-friendly tool; it's very flexible thanks to the embedded programming language, and it's really fantastic to use."

The bulk of the scene's interior was also created via ILM's computer wizardry. "There aren't any walls to depict until the very end of the sequence, when there's a big pullback revealing that the entire inside of the 'Face' is a giant alabaster shell," Knoll details. "It's almost like being inside a gigantic aircraft hanger. It's actually a minimalist temple with columns running along the walls, each of which is shaped like one of the Martian figures. There are also some other sculptural elements, including a cupola with four Martians, hands outstretched, forming these columns around the solar system display in the center. We created all of that digitally."

The Martian herself appears in the middle of the solar system, silhouetted by the sun. "It's just supposed to be a projection," Knoll explains. "She's not supposed to be a living, breathing creature, but more of a stylized, idealized representation of a Martian. She's a benevolent, friendly presence, almost like a Francuzzi sculpture — very tall and thin with elegant, elongated proportions and a bit of an Art Deco look. They definitely couldn't do the Martian using a person in a suit, because she's not proportioned like humans and she has no legs. She's like Casper the Ghost, just sort of floating along. She doesn't speak; she communicates with gestures."

Despite the large numbers of effects houses brought on board *Mission to Mars*, and the hundreds of computer-generated, miniature and practical effects shots they created, the greatest challenge DreamQuest's Yeatman faced was ensuring that all of the film's imagery meshes into a coherent whole. Sadly, *Mission to Mars* is the last film that will bear the DreamQuest moniker. Acceding to the wishes of its parent company, Disney, DQ will henceforward be known as The Secret Lab (TSL). The name change marks the end of an era, but here's hoping that DQ's maverick spirit will live on the firm's new incarnation. ■



Trouble in Mind

Cinematographer Jack Green, ASC pairs with director James Mangold to examine a case of of adolescent cerebral discordia in *Girl, Interrupted.*

by Christopher Probst

Unit photography by Suzanne Tenner

The role of a cinematographer is often likened to that of an orchestra conductor: translating an artist's vision (the screenplay) into a cohesive and harmonious work that combines the varied textures and tonalities of each section of the orchestra (camera, grip, electric, production design, wardrobe and makeup). Additionally, like a conductor, a director of photography is instrumental in affecting the pace of this interwoven "performance" as it is executed. The cinematographer must make artistic, expedient and efficient decisions to execute the production's visual plan.

Once director of photography Jack Green, ASC, was hired by director James Mangold — who had gained recognition for *Heavy* and *Cop Land* (see *AC* Sept. '97) — to help bring the modestly budgeted *Girl, Interrupted* to the big screen, Green immediately began devising a strategy. With six weeks of prep time, the first priority on everyone's mind was where to film the autobiographical tale of Susanna Kaysen (played by Winona Ryder), who checked herself into the Claymoore Psychiatric Hospital in 1967 after attempting

Photos courtesy of Columbia/TriStar Motion Picture Group.

suicide. The production struck gold when it received permission to film in the Harrisburg State Hospital in southeastern Pennsylvania.

Founded 147 years ago by Dorothea Dix as the Pennsylvania State Lunatic Hospital, the location proved to be a godsend. "The hospital was in partial retirement, so they allowed us take over several buildings," Green says. "We were able to use one building for production offices and two others for sets, and we also had free reign of the surrounding grounds. Additionally, the hospital offered us many little gems of areas to shoot in. For example, at the end of one of the hallways was a huge, arched, beveled-glass window with a craggy tree outside, which prompted us to shoot a montage of images of Winona standing in front of it as she contemplates her situation. Likewise, there were catacombs beneath the wards that led from building to building, which suited the script's needs perfectly. If we'd had to build that set, it would have taken a lot of time and we'd have spent a lot of extra money. The Harrisburg hospital came to us at a very reasonable price, and we were able to take advantage of all of its [rich] settings."

Filmed entirely in Pennsylvania for 12 weeks, beginning in January of 1999, *Girl, Interrupted* used several additional locations in the Harrisburg area. However, since almost three-quarters of the film is set in Claymoore's Women's Ward, the filmmakers focused most of their preproduction efforts on re-creating the functioning mental facility describe in Kaysen's book. "The Women's Ward was an abandoned building that we totally reconditioned for the picture," Green notes. "The art department, led by production designer Richard Hoover (*Cradle Will Rock*, *Payback*, *Dead Man Walking*), took out many concrete and brick walls to build areas that met the needs of the screenplay. They redesigned the bedrooms and removed walls to make sure that we could shoot within the rooms, and they also put in false walls so the bedrooms wouldn't look too big. There is an area in the picture with telephone booths that was [previously] a room in which a wall had to be removed. Next to that is the nurse's station; that also had to be opened up, and an observation window had to be put in. Finally, the big living room that the characters walk by during the introduction was an enclosed room as well, so a wall also had to be taken out of there to open up the room. We still wanted to retain some of the hospital's claustrophobic feeling, because it was necessary for the script, but we didn't want the environment to be so boring that there wasn't any attempt to be enlightening for the patients."

In addition to the structural changes being implemented on the sets, Green worked with Mangold, Hoover and gaffer Mark Vuille to establish the color palette and lighting for the film. "I was about 25 years old right around the period when the film takes place," says Green. "My

Opposite page: Struggling to find her own identity amid the turbulent 1960s, aspiring writer and social insurgent Susanna Kaysen (Winona Ryder) contemplates her fate after committing herself to the Claymoore Psychiatric Hospital. This page, top: During their strictly enforced "Lights Out" resting time, Susanna and fellow patient Lisa (Angelina Jolie) stage an impromptu sing-along to raise their fellow patient's spirits. Comments Green, "As a cinematographer, you're always trying to come up with ways to help a location look its most dramatic. Sometimes, you use more than lighting — you use reflections of lighting. In the case of the hallway, we used the floor. Richard Hoover and his art department always kept the floors polished, and the walls had an eggshell finish that gave us nice reflections." Left: Green (left) and gaffer Mark Vuille engage in the popular on-set "battle of the meters" standby.

Trouble in Mind

Top: After breaking into the head doctor's office, Lisa (Angelina Jolie) and her cohorts read the hospital's dubious assessments of their psychological conditions. Green lit the scene as practically as possible. He notes, "There's a dramatic and creative license you take in your approach. You have to decide how much of your personal point of view that you want to impose on the story. I try very hard to let the natural environment, the script and the director dictate what the lighting scheme should be, rather than forcing my own personal preferences onto a film." Right: On her road to recovery, Susanna finds catharsis by pouring her thoughts onto the page.

memory of that era is very strong, and I had to do very little reviewing to be able to know exactly what that period felt and looked like. However, we actually went through quite a process to achieve all of the color schemes in the film.

"For the Women's Ward, I wanted a sort of institutional green in the hallways, but I didn't want a green that would sour the faces. We needed a certain shade of green that wouldn't make a character looked peaked if we did get a reflection of it on the faces — which you simply *can't* avoid. There are certain tones of green that can almost sour your stomach when you look at them, and I certainly didn't want that to happen! We therefore added an extra bit of yellow to our green to help warm it up in the reflections, while still keeping the feeling of institutional green.

"For the patient's bedrooms, we selected a very pastel blue, which we also warmed up a bit. If you use a true blue on walls, it can quickly create an unbelievably cold feel. I wanted to be able to control the amount of blue that got into the picture with my lighting scheme, rather than having the walls dictate that, so we had to pick our colors very carefully. The final colors we chose were based on the numerous tests that we shot. We had several flats painted with different colors, against which we photographed the character's faces using a lighting scheme that we found interesting. After three or four tests, we painted the sets and then controlled the look with the amount of light and the quality of the fluorescent fixtures used."

Concurrent with the prep work, Green worked with Mangold and first assistant director Cas Donovan to devise a schedule that would best meet the production's visual and logistical needs. "During my six-week prep, I worked very hard on the schedule," Green notes. "I put together this incredible schedule of lighting, timetables and all of the various other elements — four binders' worth! I worked closely with the assistant director to make sure that we were on one side of the building when I could use natural sunlight and the scene was short enough. I was quite prepared and precise, but of course, as soon as you start shooting, you have to toss it all out the window because nothing helps! You plan on the sun being there at a certain time, but then there are clouds and it's snowing! It's bizarre how nature defeats all of those plans, and forces you to wing it and go with your gut feelings.

"In the long run, however, the planning did help, and we were able to stay right on schedule — we were in the places we were supposed to be, at the times we wanted to be there. There *were* moments when we got everything right, but of course, there were also moments when the weather didn't cooperate and nothing worked right. In those cases, we had to do a little tap dance and work with what we had. When you get down to the real nuts and bolts of shooting, after you've done all of this prep work — designing the sets and coming up with lighting schemes — you always have to deal with the practical aspect of getting things like Condors into difficult areas while there's snow on the wet ground. We tried to schedule the film carefully so that the Condors wouldn't have to move during a working period of

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Trouble in Mind

Right: Director James Mangold imparts some impassioned guidance to actress Whoopi Goldberg (who plays Valerie, head nurse of the Women's Ward) before filming a pivotal scene that marks the beginning of Susanna's healing process. Below: A-camera/ Steadicam operator David Luckenbach angles a handheld camera on Winona Ryder while photographing one of the film's many "hallway scenes."

time; we planned to have them moved before or after work. When we did have to move the Condors during shooting when the ground was soggy, we laid out sheets of plywood that they could be driven over."

Green also praises the ingenuity of his crew in devising time-saving approaches to their tasks. "My gaffer, Mark Vuille, rigged all of the electrical supplies for all of the electrical systems in the ward in the existing heat ducts," Green recalls. "Since the heat ducts weren't working, he figured out a way to run cable into a crawlspace in the attic and then drop everything down to where the heater vents would be. He could supply every inch of the ward by simply popping off a phony radiator grate and pulling out the electrical supply.

"It was so clever how the grips and the electricians all worked together. My key grip, Charlie Saldana, with whom I've done about 15 pictures, worked with Mark and did a spectacular job. With the experience that my crew and I have together, we knew we didn't want to be chasing cable out of the shot while trying to do reverses, because you have a run [of cable] coming down the hallway. On this film, we never had that problem. If we wanted to reverse, we simply turned around."

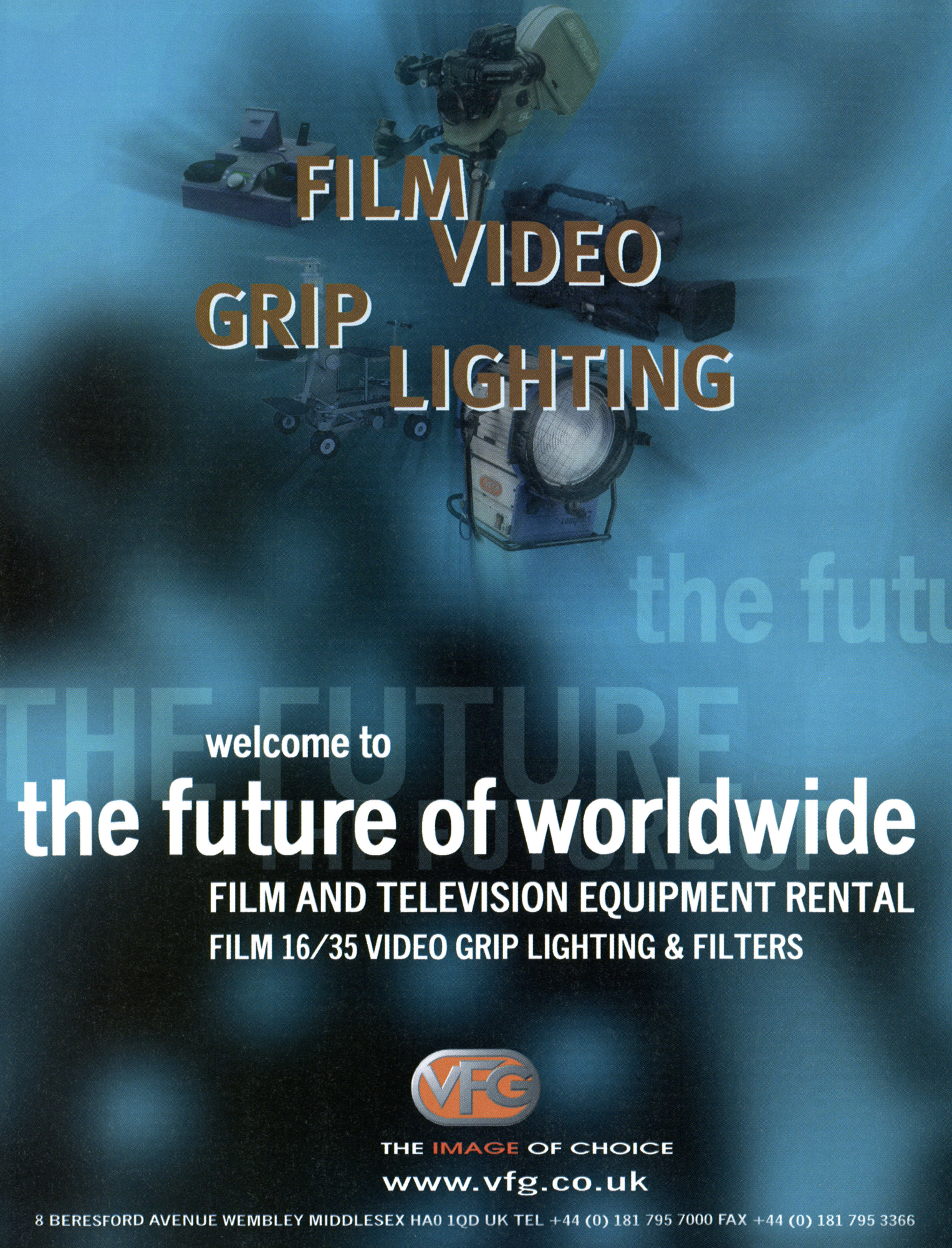
As these elements began to coalesce, Green's plan for the film's lighting design quickly followed suit. "One passion of mine is hard light," the cinematographer states. "I like contrasty images that have a black-and-white-feel, and hard light accomplishes that much better than soft light. At the same time, I realize that hard light somehow has to have a mixture of soft light in it, so I do blend them a bit."

He notes, however, that he views the development of a film's lighting scheme as an organic, collaborative process. "I try very hard to let the natural environment, the script and the director dictate to me what the lighting scheme should be, rather than forcing my own personal preferences onto a film. I'd rather be flexible and know that I have the tools to manipulate something at a difficult moment pictorially, and make it feel dramatic and real, than to try and have total control all the time.

"Our job as cinematographers is to create a heightened, dramatic sense of reality," Green continues. "Every one of us draws upon our experiences, our love of art and our love of filmmaking, and tries to make those ideas work with practical elements, such as real lamps under real conditions, or a real environment with real light coming through real windows."

To break up the visual possibilities presented in the script, the filmmakers set key moments at different times of the day. "There were three separate looks in the film that required three separate treatments," Green details. "Richard Hoover and I worked with Jim Mangold to design a lighting scheme that would allow us to have a really different look for all of the major time periods. These included a day look, a night look and a 'Lights Out,' safety-light look. All of these looks were preplanned, and every time we went from one look to the other, fluorescent tubes [in the practical fixtures] had to be changed. Since the building was over 100 years old, our electrical supply was an add-on at the time, and it was very sparse. In the hallways, there were only wires coming down for fixtures every 20 feet. However, we wanted to have lights every 15 feet. We therefore had to find about 25 old fixtures from the Fifties — 12 down one hallway and 13 down another — and put in our own wiring.

"We then added high-energy ballasts and high-energy lamps — either Optima 32 or Chroma 55s — for greater output, especially since we had these older fixtures that weren't good reflectors. We had to have all four bulbs in each to generate a healthy amount of light, because I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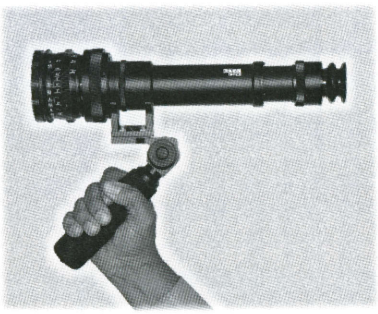

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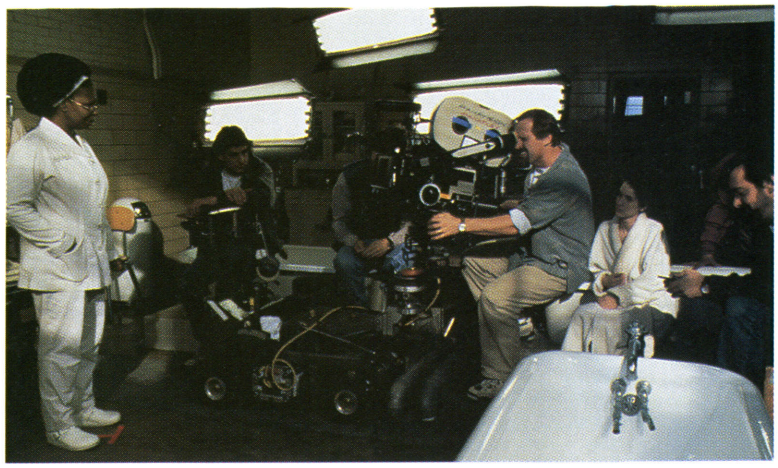

The crew lines up a shot on Whoopi Goldberg for a key sequence set in a bathroom.

didn't want to work wide-open on the lens; I didn't think that would be fair to the assistant cameraman. Bill Coe, with whom I've done about 15 pictures, is a terrific assistant and great at pulling focus, but I didn't want to him to have to deal with too much wide-open stuff. With the fluorescent lighting units in the halls, we were able to pull a T2/2.8 at head height of about six feet off the ground, so we set a base for the film of T2.8. When we did have to light up the faces a bit, we just added a fixture when the actors came to a stop, and blended their faces into the environmental lighting."

Green photographed *Girl, Interrupted* with Panavision cameras and Primo lenses. He softened the lenses a bit by using ¼ Tiffen Black ProMist diffusion to "take the crispness off of them." The cinematographer utilized a Platinum as his A-camera, a GII for backup and occasional B-camera work, and a Lightweight for Steadicam work performed by A-camera/Steadicam operator David Luckenbach. "I really like to work with an A-camera operator who also does Steadicam," Green says. "Your A-camera operator is already versed in what the scene content is, so when he straps on the Steadicam, he doesn't have to be given a lot of additional information — either from an operator or the director of photography — about what's going on within the scene. He already knows."

Daytime interior and exterior sequences were photographed on Kodak's Vision 250D 5246 — which Green rated at ISO 200 — while nighttime work was captured on Vision 500T 5279, rated at ISO 400. "Whenever I was seeing exterior windows in daylight, I balanced the [interior] lighting to daylight. Our tubes were therefore swapped out to be daylight-balanced. Also, any bulbs that were in fixtures were replaced with blue bulbs. I didn't want to have to gel the windows, except for a few instances where we gelled with some neutral density. When you're working in a practical location, one of the complications is that within one scene, you might establish bright sunlight through a window, but then have the clouds come in and make it soft and dark outside. You then have to balance your lighting to that, and if you're gelling windows, off come the gels! As a rule, I try to avoid those kinds of complications, which involve redoing things for a scene that has to have one kind of continuity. I focus on how to prevent those kinds of things from slowing usdown.

"Every time we were shooting at the windows and we didn't want them to blow out — especially if there was a specific reason to see

outside the room — we had to build up the interior light level. We had Condors outside the windows, which were rigged so that we could shoot out through them without seeing the Condors, and still have bright sunlight being projected into the room. Inside, we had something like a movie grid up in the ceiling, with four whisker poles about a foot from each wall around the room; we also put a few through the middle of the room in an X shape. With the cabling as described, we were able to place different-sized HMIs up in the ceiling, splashing into white cards high out of the frame to create fill light.

"In balancing to a T32 level outside while working with 250 ASA film stock, we had some pretty powerful units, such as 2.5Ks, up high to provide the fill, which was maybe 2 or 2 ½ stops under. You have to come up a bit in level if you're not going to ND the windows. The difficult part of that was when we came in from the hallway. With the fluorescent units dictating the level in the hallway, that hallway was never more than a T2.8. We had to work carefully to bring the feeling of sunlight through the windows at a higher key than the hallway, without letting the exposure in the hallway go black. If we were in the rooms and I didn't have to go out into or see into the hallway, then I could balance with whatever daylight was coming in. Sometimes we were working at a T5.6 or a T8. There were other times when we were working at a T2.8 because of the minimal light coming in through the windows. It was occasionally cloudy and snowy when it was supposed to be warm, morning light. The fudge factor was very much in play, because we were shooting in the dead of winter."

Green's strategy was quite different for the film's extensive nighttime scenes. "When we switched over to night," the cinematographer notes, "we had a little handcart that could be wheeled

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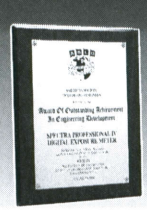

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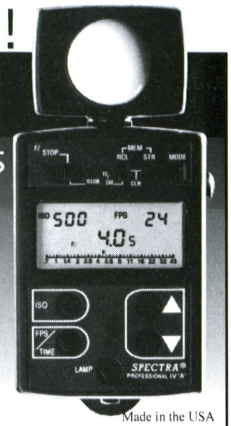

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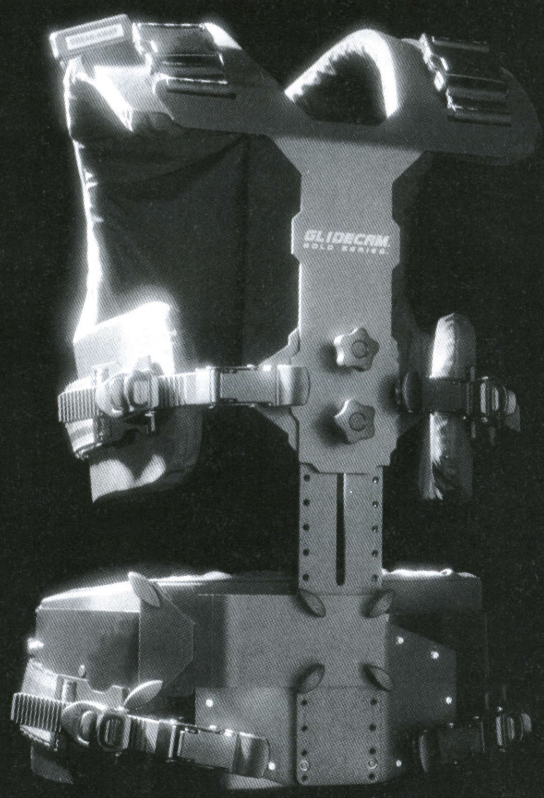

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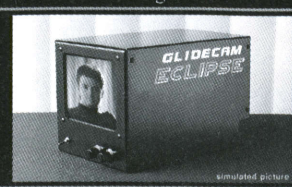

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Trouble in Mind

along that enabled the crew to change out the entire hall of fluorescent bulbs in about 20 minutes or so. There were approximately 25 fixtures with four tubes per fixture, so we had one electrician going along and pulling bulbs out while another was right behind him, putting bulbs back in.

"It didn't take long to transition to the nighttime, lit-up scheme before the nurses call 'Lights out,'" Green continues. "The main areas of the ward at night were lit entirely with fluorescents. Every now and then, when we'd move in closer, we'd have an additional Kino Flo unit on a stand; we'd float it in just off camera to light up the area under a person's eyebrows if they ended up directly under a fluorescent. Generally speaking, we tried to stay as honest as we could to that practical look, which consisted of toplight from above. If a door was open, we'd have another Kino in the door so that the actors would come through a spot that was a bit hotter.

"In addition to the fluorescents, we used the same Condors with the same basic lamps for the night work. If it was moonlight coming in through the windows into the ward rooms, we put a half CTO or half CTS on the HMIs to make the moonlight go not quite so blue. To me, real moonlight feels almost blue-gray, and is fairly faint. However, in creating moonlight, we are stuck with the real element of film and its ability to perceive light. So how far down can you go and still keep an exposure without it going milky gray? You have to stop going down [in level] at some point, especially if you want your camera assistant to have any ability to carry focus. I therefore fudged the exposure of the moonlight up high enough so that I could later take it down to the right level when I printed it.

"When you print down, however, you also have to keep in mind [whether there are] any tung-

sten lights coming into the room, and what their levels have to be. As a rule, I don't like to expose moonlight any less than a stop under. Then, in the lab, I'll take it down another half to three-quarters of a stop to keep it on the edge of what moonlight would feel like under those circumstances."

An example of this method occurs in a scene in which Whoopi Goldberg, playing the head nurse, comes to Susanna's room to give her some support. Green recalls, "In that scene, we had the influence of the hallway light coming into a room that was dark. There, we'd let the hall feel like a strong source of light, letting light spill into the room. To do that, we tried to make it seem as if the light spilling in was fluorescent, but in reality, if you want that feeling of light coming through a doorway and into a room, you have to use fairly direct light. Even though the fluorescent light is the source that you're looking at, you need a light strong enough to feel as if it's influencing the room. We'd use a 2K high up on a stand to throw the light into the room. As Whoopi came into the room, we had a T2 on the moonlight on Winona, but on Whoopi we brought it up a bit to almost a 2.8 to balance their skin tones. I used the actual moonlight source, but took Winona down with a grip double on the window, just out of picture. Then, in the hallway, we let [our light level] come up a bit to about a T3.5, so you had the feeling that the room interior was down and the hallway was a larger light source."

To add further visual diversity to the nighttime lighting scheme, Green and Hoover concocted a separate lighting system for scenes in which the ward was dormant. "When we went to the 'Lights Out' look, the overhead fluorescents were turned out and little safety lights mounted at the bottom of the hallway walls were turned on. I love dramatic moments when you can change up an environ-

Trouble in Mind

Green notes that "the bathroom is an area in which Winona's character, Susanna, experiences personal growth, I wanted the sunlight to have nice hot edges, while the fill side of the characters' faces would be relatively dark. I put ¼ CTS on the big tungsten lamps coming through the window to create a warm, golden light. In combination with the warm-colored tile, that gave the whole room a yellowish, warm feel."

ment. The hallway at night, after 'Lights Out,' was a good example of how you can create that type of change. You feel as if you're in the same environment, but it is a distinctly different lighting look. Wherever we could, we used the actual safety lights in the building for edge lights. When we couldn't do that, we fudged an Inkie or Tweenie on a very low beaver board to create a similar spill up from the floor. Sometimes, if the actors got too close to the practical that we weren't photographing, the light became too much like 'monster light.' I certainly didn't want to have a 'monster light' look, so I would raise the light up a little and move it to an angle that was a bit more attractive.

"There was also a scene in the bedroom during the 'Lights Out' look that involved a young orderly changing a lightbulb in the ceiling," Green adds. "In that case, all we had to work with was the night safety light on in the hall and moonlight coming in though the windows. Again, in that case, we still had to keep the hallway bright enough to make it feel as if there was a light on out there, but the levels were almost in balance because they were both so dim. I just put a little edge light on the orderly standing in the doorway, to make it seem as if he was catching an edge from one of the safety lights.

"The only time I really supplemented the moonlight in the room during 'Lights Out' was if I wanted a catch light in Winona's eyes. In those situations, I had a Mini Flo next to the lens that was dimmed way down; it didn't even move the needle on the meter, but it caught her eyes so you

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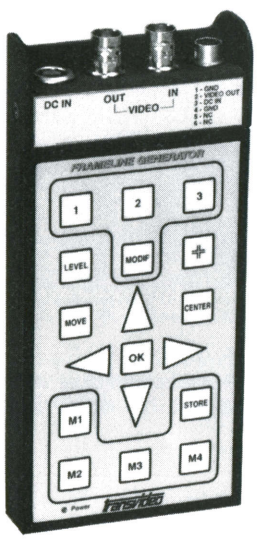

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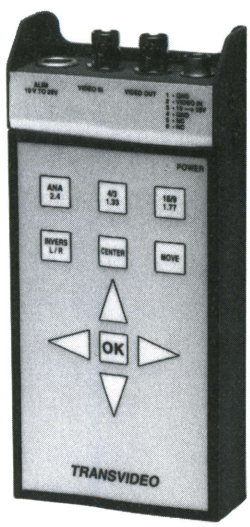

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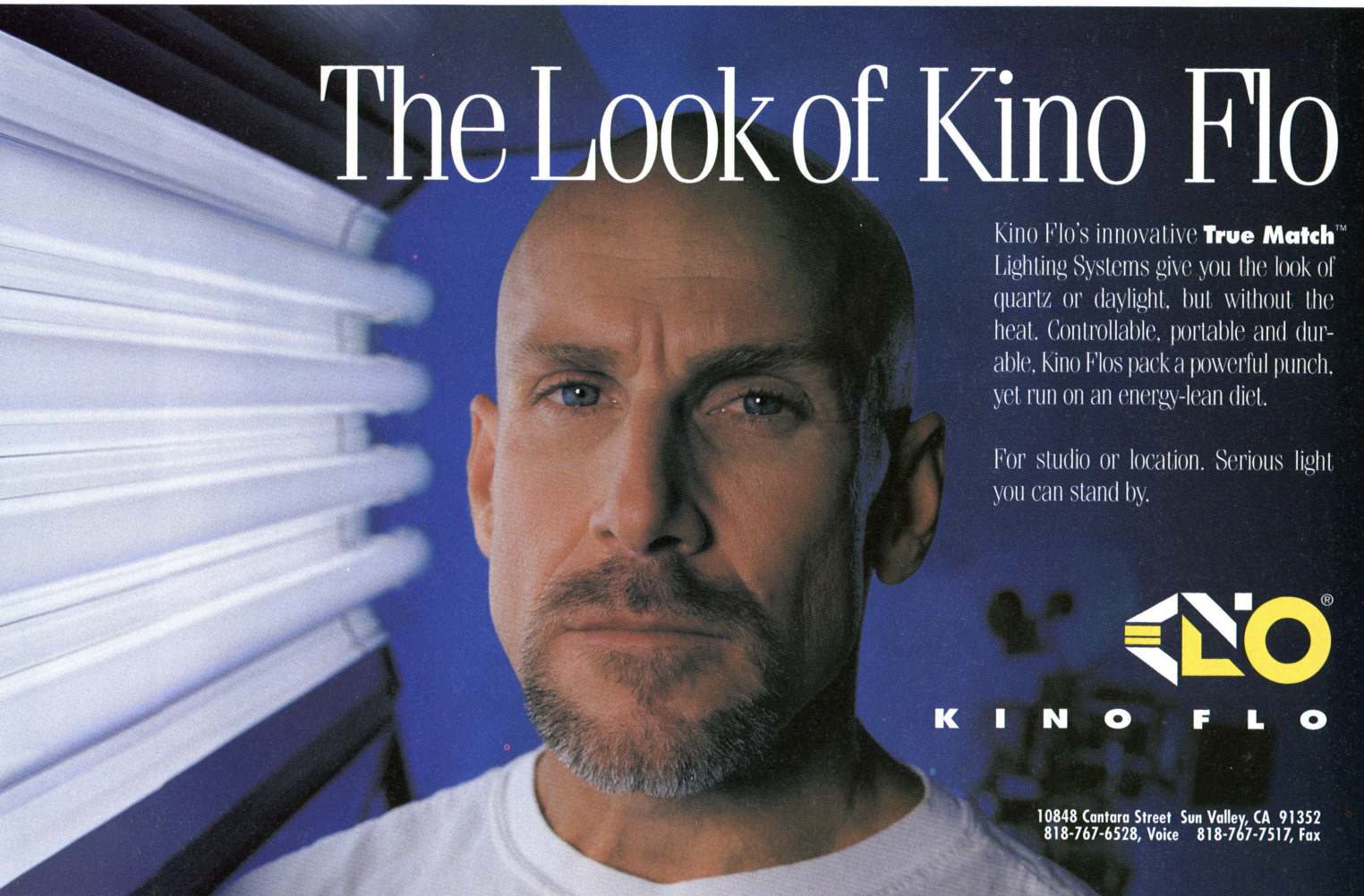
could see them in the darkness. I try to keep eye identification in a scene. If you know the eyes are there, then you know the face is there, even if you can't see it. Your imagination fills in the rest."

After working so often with hard light, Green has devised a simple, time-saving technique to aid him in shaping the difficult qualities of a direct light source. "I have a system that I like to use that keeps my hard light working, but as you get closer to faces, you diffuse it to make it more pleasing," Green reveals. "The technique starts with the plan that I'll use 216 for the most diffused moment, 251 for the second level of diffusion, and Opal for the least amount of diffusion. For instance, on a wide shot, I'll start with Opal on the lamp and two double scrims. As I get closer to the face with the camera, I'll pull off a double and put on the 251. That maintains almost the same balance. As I get much closer to a close-up, I put on the 216 and remove the other double. By doing that, you can keep pretty close to the same lighting balance; you actually have the same shadow direction and the lamp hasn't moved, but you've gotten just a bit softer as you've moved closer with the camera. I particularly try to use this method with females. You don't want to have a really crisp, hard shadow on them; you want to have a feel of the shadow, but you don't want a sharp line. This system works so well that you can almost always count on it working every single time." ■

The final image of the bathroom scene as it appears in the film.



Lighting: Our Legacy As Cinematographers

A newly inducted member of the ASC offers his thoughts on the art of lighting and its importance to directors of photography.

by Richard Crudo, ASC

We've all heard the old cliché about 100 cinematographers lighting the same scene in 100 unique ways. Well, it's a cliché because it's true. Apart from an individual cameraman's choice of equipment, the plain fact that all of us have our own particular way of seeing the world is enough to guarantee a broad range of results. If someone were to actually take the time to set up this hypothetical situation and view the prints, whose treatment would represent the absolute best of the lot? Your guess is as good as mine, or anyone else's. One thing is for certain, though: everyone knows quality when they see it.

Of course, it's a fast track out there. At this stage in the evolution of film, the professional standards for cinematographers are very high indeed, even in the service of sub-par material.

On that note, I'd like to submit a simple and quite often overlooked absolute: the basis for the most effective motion picture lighting originates not with any technical concern, but with the personal taste of the cinematographer.

Now for the complicated part: it's never that easy to develop those impeccable instincts.

Lighting with good taste — that is, in a manner both true to the story and faithful to one's personal intentions — is an unending and extremely challenging pursuit that takes place not so much through the eyes but between the ears. As a viewer, the thing I respond to most is simplicity. This doesn't necessarily mean that the cinematographer is using only one lamp to cover a space the size of Wisconsin. Rather, it indicates an ability to reduce sophisticated concepts to their basic elements, and then translate them to the screen in an elegant way. As with everything in life, what might be deemed an acceptable approach varies under different circumstances. The funny part is that achieving the simplicity that enables good taste in lighting can often require not just a heroic mental effort, but a strenuous mechanical one, too.

I know that my own cinematographic values will forever be a work in progress. I'm also the person least qualified to make a judgement on them, so I just keep working hard to improve. During my earliest days as an assistant cameraman, I tried to sensitize myself to the lighting conditions of whatever space I found myself in at any given moment — whether it was my own apartment, a subway station, a city park, or St. Patrick's Cathedral. I simply committed myself to seeing the trees instead of the forest. This is not something that comes naturally to most people, and I admit it took quite an effort at first. I shot tons of stills — most of them atrocious — but the knowledge that I gained during this period of trial and error made it all worthwhile. Before long, I was able to build a correlation between the moods and textures light created in my daily life, and the effects that many of the cinematographers I worked for were killing themselves to capture on film. Taking these observations to the next plateau — by applying them to my own work as a cinematographer — was another story.

Like most cinematographers, my leap into the deep end began with the shooting of innumerable student films. To cure the disappointment I felt with the newsreel-like quality of my beginner's work — I swear, some of it looked as if a searchlight had been lashed to the matte box — I

began paying closer attention to the resumés built by the cinematographers whose reputations I respected, and whose philosophies appealed to me. I initially became interested in the old-timers, the studio men: Gregg Toland, ASC, John Seitz, ASC, Charles Lang, ASC and so many others. As I examined their work in revival houses, screening rooms and on videotape, I gradually began picking up on the whys and wherefores of the choices they made. Sometimes their motivations were obvious and mechanical, resulting in lighting tailored for scenes or sequences in which an intractable piece of the physical environment dictated the approach. Other instances in which they had free rein proved trickier to analyze and decipher.

Two major discoveries became clear almost from the outset of my studies. The first is that there was nothing random in anything I observed. Regardless of genre or budget, the lighting was invariably backed by a sophisticated thought process that underscored the greater themes of the movie. This then led to the second and more surprising revelation, when I realized that even the dreaded "newsreel look" could be an appropriate choice under the right conditions. I had come full circle, only to learn what I already knew — that the ability to make that call was still a bit beyond my reach.

Gordon Willis, ASC has stated that if a movie is to have any chance of being artistic — and by definition, this would include a healthy dose of good taste — the effort has to begin with a mastery of craft. Truer words have never been spoken. Lighting a set for any kind of effect can be very much like trying to catch smoke in a bottle. You're grasping after what is often no more than a vague feeling in your gut and trying to make it real, not just for the audience but for the crew — and for the latter group, in the most workmanlike terms. In my experience, if a cinematographer can strip his or her own methodology down to its least corrupt form, and then use that knowledge to act reflexively on the set, the battle is half won.

One of the ways I learned to do this sprang from another practice that originated during my time as an assistant cameraman. For years, whenever I had a free minute on the job, I would scribble out a diagram (much like those on the following pages) that indicated the dimensions of the set I was working on, along with the position of each light and a description of the way it was used in regard to the actors. I recorded the other relevant details as well: raw stock, ASA, lens, T-stop, lab instructions, et cetera. In addition to creating an awareness of the jobs done by the various lamps and related equipment, the big payoff came when I went to dailies. Over time, aspects of the work that had previously been a great mystery acquired meaning.

The light we use to express ourselves is immortalized on film, and illuminates who we are at a given moment.

As I compiled a catalogue of diagrams, I noticed certain patterns emerging. Some of the cinematographers I worked for tended to record whatever action was set down by the script in the most literal of terms. Their results were competent and professional, but something was missing. Others were more imaginative. Their choices were recognizably better and more lively. You could almost feel them reaching down deep for an inspired interpretation. Naturally, they were the ones I began to gravitate toward, and whose work I studied the most intently. Without even knowing it, I was bridging the gap between what I had already cribbed from the old-timers, and the practical reality of what a light will do when you turn it on.

It's only now that I can see how invaluable these little lessons were to my development as a cinematographer. They have also helped me appreciate the rich legacy that every one of us has inherited, from the first turn of the crank on Edison's prototype camera. The light we use to express ourselves is immortalized on film, and illuminates who we are at a given moment. Those of us working today owe a great debt to all of the artists who have preceded us, especially the ones we've learned from. All of the choices we make through the lens, and hence the level of our taste, is a distillation of everything that's gone before.

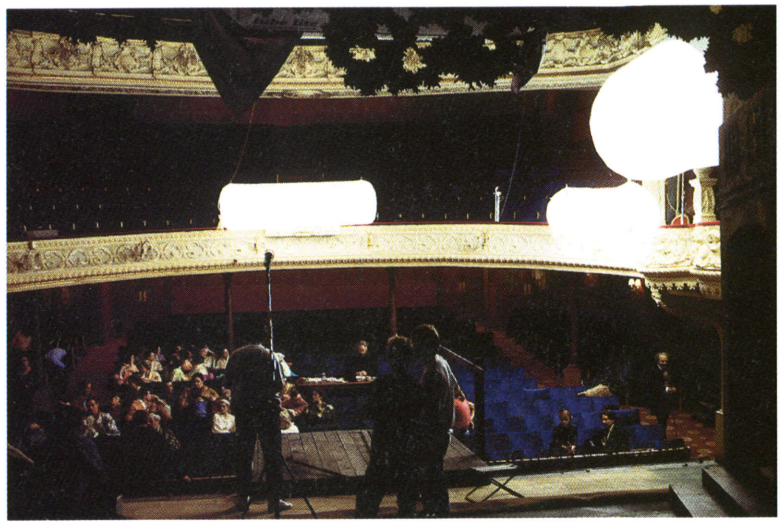
But what of the future? Will the emergence of digital technology lead to an erosion of the high standards established in traditional motion picture photography? In the extreme scenario, it potentially could. However, the responsibility for what will ultimately happen lies with the community of cinematographers itself. Anyone who has used an 8-by-10 view camera knows that it serves a different purpose than that of a point-and-shoot disposable. It's how you apply your eye and experience that counts. Quality is also dependent upon what you demand from both your colleagues and the manufacturers of new technology.

The history of cinematography is a history of progress, and now is not the time to let our guard down. The best people will always be in short supply, and will never be rendered obsolete. In the end, the odds are on our side, if only because good taste never goes out of style. ■

TOPSY-TURVY

Cinematographer: Dick Pope, BSC

by Beth Pinsker



Top photo: The production went to great lengths to reproduce the period staging of *The Mikado*, Gilbert and Sullivan's most acclaimed operetta. Bottom photo: An array of internally lit, helium-filled balloons (supplied by Leelium Ltd. of England) were used to illuminate the theater's auditorium. Opposite: A diagram details Pope's approach to the stage lighting for *The Mikado*.

When cinematographer Dick Pope, BSC was preparing *Topsy-Turvy*, Mike Leigh's raucous foray into the world of Gilbert and Sullivan, he knew that he'd have to be fast on his feet. "It's pretty unique working with Mike, because there is no script," Pope acknowledges from his home in London. "His films are all based on private, improvised rehearsals that he conducts with the actors." These sessions later become the basis of detailed outlines that collectively serve as the company's "shooting script."

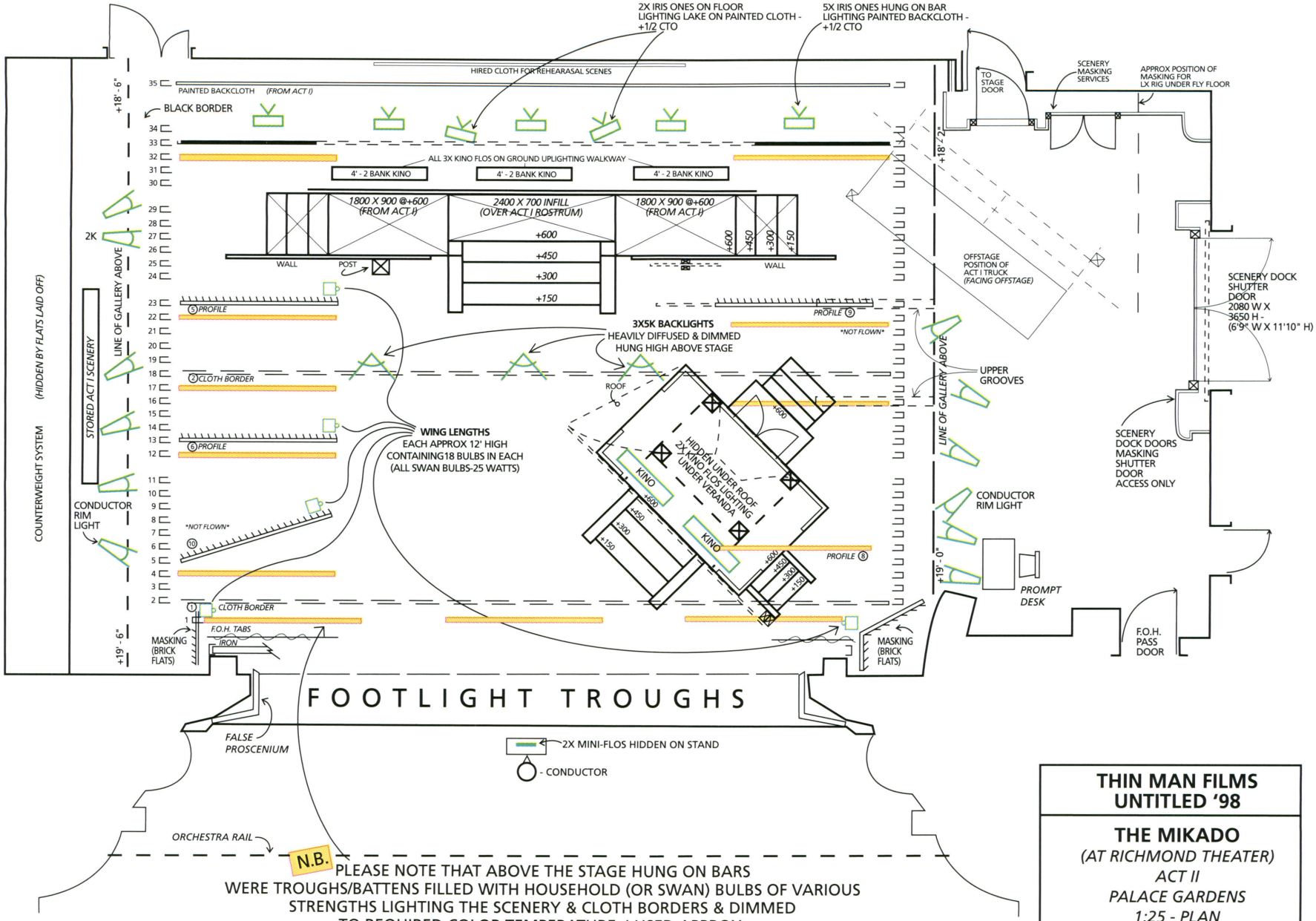
During the past decade of his feature-film career, Pope has worked on all of Leigh's projects, beginning in 1990 with *Life Is Sweet*, then *Naked*, continuing through the Oscar-nominated *Secrets & Lies*, and now heading into the new millennium. Since he began shooting features in 1985, Pope has collaborated with many other filmmakers as well (he shot Mike Newell's *An Awfully Big Adventure*, Beeban Kidron's *Swept from the Sea*, Philip Ridley's *The Reflecting Skin* movie, and most recently, Christopher McQuarrie's *The Way Of The Gun*, among many other projects), but he obviously cherishes his ongoing collaboration with Leigh.

Three decades into his career, Leigh is still known as an experimental director, which means that Pope has to be "pretty flexible and ready for anything that's thrown at you. The filmmaking process with Mike is a journey of discovery that the company makes together. No one person knows any more than anyone else about what lies ahead."

On *Topsy-Turvy*, Pope's task was complicated by the fact that the story, while highly dramatized, centers on real people and real events in the Victorian era, whereas all of Leigh's other films have been fictional and contemporary. Pope explains, "The challenge with Mike is always to set a lighting and shooting style from the outset and then hang in there to achieve consistency throughout, as the story slowly unfolds. The unique challenge for me on *Topsy-Turvy*, apart from the sheer scale of the project, was not only to create a really authentic Victorian feel in the lighting both on- and offstage, but also to approximate the full-on experience of being there in *that* audience, in *that* theater, in 1885. Back then, the electrical experience was very new and exciting, and the stage was lit more brightly and with much more color than it ever had been with gas fixtures. I wanted to re-create that feeling with bright, deeply saturated, rich colors onstage against a darker, browner, desaturated world offstage."

One of the film's most difficult sequences to light was the climactic staging of *The Mikado*, Gilbert and Sullivan's most acclaimed operetta. The elements included full-cast dance numbers, live singing, action in the wings and backstage, a live orchestra that needed functional light by which to play their instruments, a full audience, and a recently restored theater that would not allow the use of any "movie lamp" fixtures in the auditorium. To top it off, the filmmakers had a grand total of less than four weeks to complete their work at the theater before the next show started there.

Pope began prepping for the



N.B. PLEASE NOTE THAT ABOVE THE STAGE HUNG ON BARS WERE TROUGHS/BATTENS FILLED WITH HOUSEHOLD (OR SWAN) BULBS OF VARIOUS STRENGTHS LIGHTING THE SCENERY & CLOTH BORDERS & DIMMED TO REQUIRED COLOR TEMPERATURE. I USED APPROX. 12 X 8' BATTENS (TROUGHS PAINTED WHITE INSIDE) CONTAINING 24 BULBS IN EACH TROUGH. (I.E. APPROX. 300 BULBS IN TOTAL, MANY OF WHICH WERE THE SWAN BULBS THEMSELVES.) (SWAN BULBS OUTPUT APPROX. 25 WATTS)

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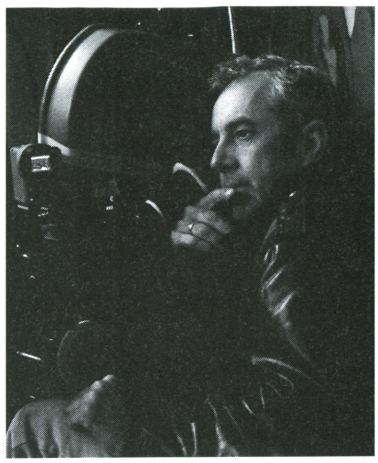

Pope mans the camera. He offers, "The unique challenge for me on *Topsy-Turvy,* apart from the sheer scale of the project, was not only to create a really authentic Victorian feel in the lighting both on- and offstage, but also to approximate the full-on experience of being there in *that* audience, in *that* theater, in 1885."

challenge well ahead of time; while working on another feature, he used his free time to study the period and its lighting history with Leigh. The duo learned that during its initial staging in 1885, *The Mikado* was one of the first shows to be fully lit by electricity. To ensure an authentic look for *Topsy-Turvy,* Pope even got General Electric to hand-craft several thousand replicas of Swan electric lightbulbs, which were very new technology in 1885. These were the only electrical fixtures used in the theater, and they illuminated all parts of it, including the stage. The only other source of stage lighting back then was from the original follow-spots: the Limelights.

When Pope got access to the theater, he only had one week before shooting commenced to prep all areas and various scenes from three different operettas. Each staged piece had to be lit differently to reflect the set changes and the years between the productions. "While we were lighting, the art department was there customizing the theater, constructing and erecting sets, and we worked together to pull it all off," Pope says. "During that frantic week, I pre-lit everything in that theater."

While Pope tried as much as possible to employ authentic period lighting, he discovered that the carefully re-created Swan bulbs simply weren't strong enough to use as a source. "They were dim — very dim indeed, less than 25 watts," he recalls. However, because they had clear filament and photographed perfectly, Pope's solution was to bring down the level of all the other lighting to make the Swan replicas appear to be the main source, and then use them for all of the in-shot practical lighting in the film — of which there was a huge amount. In the theater, the cinematographer rigged nearly 1,000 of these Swan bulbs into Victorian-era battens stacked vertically behind every scenic flat onstage, as well as in the footlights when they were in shot.

Unfortunately, the period glass lamps specially placed throughout the auditorium complicated matters even further. As Pope explains, their shades "were too small to take the Swan bulbs, which weren't actually bright enough either, since I really needed those practicals to look as if they were lighting the auditorium. Luckily, the shades were frosted, so instead I used small BC 60-watt clear candle bulbs that I dipped in a mix of stain and shellac varnish. That tactic produced a warm brown color, and also allowed us to avoid dimming and to maximize the bulbs' brightness. It was spot-on — the color temperature and the look they produced was great."

Alongside these elements, Pope created a long soft wall of light comprising 10 eight-light Mini-Brutes on each side of the stage and about 17' above it. These units carried both a half-diffusion (Lee 250) on the barn doors, as well as a continuous stand-off frame of heavy frost (Lee 129). Black skirts above and below the units controlled any spill, and a system of sliding black curtains ensured that the rig would never be seen. Above the stage, hung on all available bars and lighting the scenic painted cloths, were long period battens and troughs that could be featured in the frame, fitted with a variety of lightbulbs in different wattages. Due to the constraints of hanging scenery, only one bar, carrying three heavily diffused and dimmed 5Ks, was in a position to provide backlight to the front of stage, but Pope used it very sparingly. On the narrow catwalks high up on stage left and right, Pope placed a variety of Fresnel fixtures ranging between 2K and 300 watts. These modeled and highlighted the sets but never the actors, and could be hidden at short notice.

The footlights comprised three 8'-long period troughs containing a total of 75 Swan bulbs. However, for all filming not featuring these bulbs, Pope fitted 100-watt household bulbs instead, alternated every third socket with 275-watt Photofloods, all dimmed down. For all close work of the actors onstage, these sources were replaced by six 2.5K Super-Zaps spread across the front of the stalls. "The Zaps were placed low, but not nearly as low as the footlights," Pope notes. "For tighter angles, this approach was much more attractive, since the footlights would have been too low and ghoulish. I covered both alternative lighting setups with diffusion and a cosmetic peach gel that warmed the actors' skin tones very naturally and really brought out the costumes."

Pope also floated four large, internally lit, helium-filled balloons — two 15' (8K) and two 8' (4K) cylindrical units — provided by England's Leelium Ltd. According to the cinematographer, these units, known as Leelium balloons, "gave off a beautiful, directional soft light, and were basically our only source of lighting in the auditorium." Even better, they could be moved at will, and were either tethered above the proscenium arch, raised to the roof, or floated anywhere they were required to provide illumination for audience reaction shots.

In order to be truly faithful to the film's period, Pope would have had to leave the lights up in the auditorium during the shows, but he

dimmed them instead. "That was artistic license," he concedes. "They didn't turn the house lights down at the Savoy, because they sold librettos so people could read along during the show. As this was a good source of income, they always kept the auditorium lit — a true example of commerce triumphing over art!"

All of the aforementioned lighting was still not enough to do the job, however. "Using the footlights and sidelights just didn't do it," Pope notes. "When I looked at the stage with all of these elements playing, it was still lacking. I realized that we needed the keying effect of the old Limelights to model the actor's faces, put sparkle in their eyes, reflect back all of the incredibly ornate fabric on the costumes and penetrate deep backstage. There is a popular misconception that Limelights produce a bluish, HMI-type light, but this is just not true. I was fortunate to be given a demonstration during my research, and was amazed to discover that Limelights are, in fact, a very warm source."

Pope therefore placed a 20K tungsten keylight to one side in the first balcony, buffering the fixture with more cosmetic peach and diffusion. He also employed a complicated set of cutters to box the light in on the stage, and prevent it from spilling onto the orchestra or the theater's arch. With all of his lights patched into dimmers and controlled by a master computerized lighting desk, Pope was ready for any combination. "I could key from stage left or right, or from out front with the 20K, footlights or Leeliums," he explains. "Although these elements never all played together, I was covered for any eventuality."

For the most part, during the staged extracts, Pope shot in the traditional theater orientation, toward the stage, to provide the audience's point of view. On rostrums built over the seats, he set up his main camera, a Moviecam Compact, and a secondary Moviecam SL (a third camera, an Arriflex 35-III, was also sometimes used). He used a brand new set of Cooke Classic lenses (the first and only production set available at the time in Europe), but in the theater he had to supplement this set with other lenses to service all three cameras. These consisted of Canon long lenses, Zeiss wide angles, a Cooke 10:1 zoom and an old Cooke 152mm portrait lens which "lent a beautiful, old-fashioned look to close-ups. There were certain color differences, however. For example, the Zeiss lenses weren't as warm, but I dealt with that in timing. We didn't use any smoke effects, because they would have evaporated immediately, so I used a Tiffen Soft FX filter instead to provide some atmosphere; I increased or diminished the effect [of the filtration] according to which lens I was using.

"When I have control, I rarely light to wide open," Pope adds. "I like to work at a stop ranging from 2.8 and 4 on interiors, because I like very sharp images with good depth of field. I used Kodak's Vision 500T 5279 stock throughout, exposed generously, and printed in the low forties to get a thick, fully saturated negative. At Deluxe labs in London, I tested different processes such as bleach-bypass, CCE and ACE to heighten the Victorian feel — thereby gaining deep blacks, but of course losing saturation. Ultimately, though, we decided to process normally. In the entire film, there is not one window providing real daylight. There are no day exteriors, and every scene is lit. We created our own world, and hopefully I was able to control this in the camera, and achieve the contrasting levels of rich color or desaturation that I so wanted in order to visualize this Victorian theater world that our characters inhabited." ■

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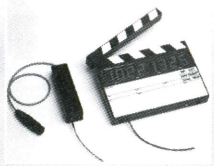

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AMERICAN BEAUTY

Cinematographer: Conrad Hall, ASC

Interview by Christopher Probst

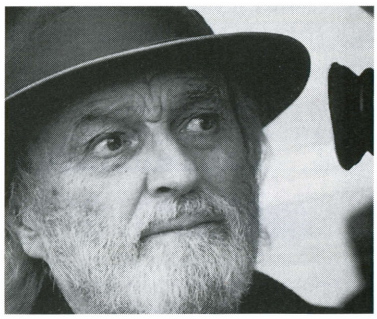
"I don't think anybody involved with *American Beauty* had any real idea of the success that this film would enjoy, in terms of its acceptance by all different groups of people," says the picture's cinematographer, Conrad Hall, ASC. "Now, none of that would have been possible without the extraordinary talent of the film's director, Sam Mendes. Even though *American Beauty* was Sam's first film, it was extremely well thought-out. Every element of *American Beauty* — the production design, the performances, the lighting — fell into place because Sam had such a clear vision of where to take the story. All of our efforts fit into the overall scheme of what he was trying to achieve with the film.

"Quite often, first-time directors are not always strong visualists. Sam Mendes, for some reason or another, seemed to know it all. He guided all of us into each scene, in terms of what was important to see and not too see, as well as the various moods. Even during the first meeting I had with Sam, he showed me some beautifully drawn and executed storyboard images of the film's opening, and they were already in a widescreen aspect ratio.

"*American Beauty* is a hilarious, sad and somewhat disturbing picture that ultimately affirms a sense of our humanity. However, the whole film has a certain sense of peace compositionally, and a sort of classicism. Everything is quiet and simple, which allows the viewer to just watch things happen in a very graphic frame.

"In regard to my lighting approach, I have to say in all honesty that I actually have a very hard time explaining it, because it all comes to me very organically. My visualizations are shaped very early on by reading the script. After I read the script a second time, those visualizations get shaped a bit more finely. And by the time I get a chance to meet the director, my ideas are even more refined.

"Sam rehearsed the scenes beforehand, and even though we had storyboards and things like that, you



often get new ideas when the actors rehearse. Sam was always very open to any of those new ideas. For me, it all begins on the set, when I'm watching the actors rehearse with the director. I am not a visionary, and I can't visualize ahead of the story. I'm somebody who watches life, reacts to it and then organically organizes and expresses a visualization based on my inner feelings.

"For any given scene, Sam and I would often discuss the mood, but from there I was basically free to do whatever I felt was appropriate with the lighting. I like to keep myself open to the invention of the moment, while considering what's important for the scene. I keep on top of the story and try to know what is important *emotionally* for the scene. *American Beauty* is essentially about dysfunctionality; the two families in the film live in two different sorts of dysfunction.

"Rather than trying to scribble out a lighting plot for this special section, I've decided to talk about one individual scene, and break apart some of the *motivations* behind the lighting of several key shots.

"The scene I chose to examine begins with Kevin Spacey's character, Lester, coming into the kitchen at night. It's raining outside, and as Lester gets a beer from the fridge, he hears some music from the living room. He walks down the hallway into the living room, and there we see Angela [Mena Suvari] standing in the corner by the stereo.

Shot A

"When Lester enters the room, he stands in the doorway in silhouette, yet there's light on his face. The light is very soft, but it's focused just on his face; even his chin is in darkness. If I'd started to put an overall fill light on him, it would have hit the walls and started to take all of those joyous blacks out of the shot, so I tried not to make that light too noticeable. I used something like a Pepper with some Opal [diffusion] across the barn doors, and some flags, to keep the light from straying everywhere.

"On the right side of frame, I had a special light just edging the

Top : Cinematographer Conrad Hall, ASC on the set of *American Beauty*. Shot A: In this darkly lit living-room scene, taken from an actual blown-up anamorphic release print, Lester Burnham (Kevin Spacey) flirts with his teenage daughter's distraught friend, Angela (Mena Suvari). Hall supported this tense moment visually with somewhat foreboding rain-affected light and silhouetted faces.

bouquet of roses. Throughout the entire picture, I made a conscious effort to feature the roses in frame. In fact, the set dressers had roses everywhere — they're in almost every shot — but keeping them bright red and all lit up could become pretty boring and too obvious a gimmick. Instead, I usually tried to keep them dark, using a Dedo with a focusing snoot or a Pepper to just nick the back edge of them to keep them black, while *just* giving them a little red tinge.

"I also edge-lit the objects on top of the table on the right of frame to give them some shape against the wall. At frame left, the couch was starting to bleed into the walls, so I lit the wall a bit to give it some separation and make the couch silhouette against it. The cross-light in the foreground was coming in through the windows from outside, and added a rain effect to the shot. It was raining throughout the whole last part of the picture, and in every shot there was some shadow or feeling of the rain — or perhaps the rain itself.

"Ultimately, I worked with the same sort of strategy I always do — I first light for what I want to see by painting in specific areas in values of black-and-white, and then add a final light that I call 'room-tone.' Room-tone is a fill light, usually bounced from the ceiling off a beadboard or white card, that brings up the shadows to where I want them — without really showing the presence of the fill, while still keeping the blacks black. With the room-tone for fill, the pictures on the wall are barely visible at all. The slash of hot light in the background behind Kevin is probably four stops over, while the light on the walls is four stops under. I shot everything at the same stop, T1.9.

Shot B

"As Lester approaches Angela, we see them in this wide shot silhouetted against the French doors and the rain outside. The shot is nothing but a very straight move in. As they come together, the camera moves in very slowly. The light above their heads was our 'porch-light.' I had several lights outside that were either lighting the greens so that we could *just* see them, as well as several focused lights — usually spotted in 'on-the-pin' — coming through the windows. I like to have those units on the pin so that the light doesn't stray all over the place. I want to be able to pick out the certain areas that I want to light. We had some special material on the windows to make the water run a bit slower, which also helps pick up highlights. In this shot, the windows actually get way too bright for a night scene, but I let them go. It's almost scary to have something so bright in there, but to me, beauty comes from contrast. I love contrast — either the lack of it, or an abundance of it. I always love having hot elements in the frame when it's appropriate. In truth, reality isn't always perfectly balanced. I love to have images that are a bit over-the-top — either too light or too dark — because they provide energy and a more 'realistic' dynamic range.

"Again, I added room-tone, and then, as a final touch, I hit the roses with a dab of light to bring them out of the darkness. It's almost a black-and-white picture with a dash of red in it.

Left, Shot B: In the living room for this wide two-shot, Hall silhouetted the actors against ambient "porch-light" coming in through the French doors. The cinematographer rendered the frame almost entirely monochromatic, except for the bouquet of roses which he "nicked with a focused Dedo light." Below, Shot C: For Lester's close-up, Hall stayed with a silhouette feel on the fleshtones, but added a small degree of top "keylight," and also utilized edge-lights and rain patterns on the ceiling to "paint" separation into the frame. Following page, Shot D: Unable to go through with his seduction of Angela, Lester consoles the confused young girl.

Shot C

"As the scene progresses, Lester and Angela move to the couch. For each of their close-ups, I continued to introduce the element of rain. Even on this somewhat awkward angle of Kevin, I tried to take the lighting from the window and shoot it up at the ceiling to get some rain in the shot. There is actually very little light on him, and what there is probably came from a Pepper aimed into a two-foot beadboard overhead. I'd then put singles and doubles in to bring it down by eye.

"As he leans forward, he moves almost completely out of his light. The right side of his face approaches darkness, and it's great. His chin is in darkness. The light on the ceiling was the 'key' for the scene — it was probably around 12 footcandles, if not 32 footcandles or about a T3.2 with Vision 500T 5279 rated at 400 ASA. That helped to give shape to the darkness. The brightness allows the darkness to feel dark. ➢

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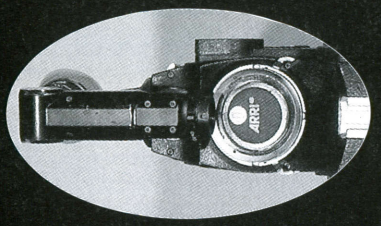

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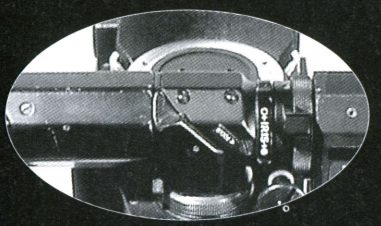

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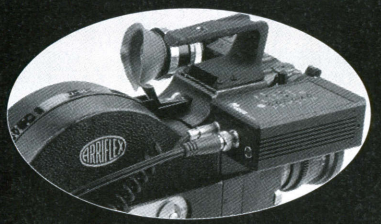

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"Also, notice the 'liner' [edge-light] on him. Again, I had a Pepper on his neck that I cut off of his ear. I don't let the light go too far. It's a light from behind, but I cut it so his head falls off into the background. There's almost no separation to it. The separation is actually down below [just on his neck], which gives you a much different sense of the mood than if you had the liner going all the way up past his ear and over his head — that would be 'lit.' But this way, it's just a stray piece of light landing on him. I add these little pieces of light to 'paint' the frame.

Shot D

"The scene is almost embarrassing to watch: this older man is coming on to his teenage daughter's beautiful friend. While watching this happen, you feel embarrassed because you can immediately relate to what Kevin's character is feeling. You're embarrassed because you may feel the same thing when your own kids bring home their 16-year-old girlfriends. Maybe you haven't *acted* on those feelings like Kevin's character does, but perhaps you've thought about it. When you're watching a movie that has the same situation in it, you feel that it's part of you. You've *had* these thoughts, but the guy in the scene is actually *following through* on them. It's scary.

"In this wider two-shot, the light on the wall in the background, the light on her back and the light to the left on the couch gives the image a very structured kind of composition. It's very simple. It gives you peace and comfort to have a frame that's looser and allows you to breathe.

"The faint light on his back is probably from the room-tone. On this shot, I believe that I put the room-tone behind them so it wouldn't get all over their faces. However, it did provide enough light to bring up the couch on frame right without reaching to the back wall. You don't need see back there — it's better to keep that area dark so that the couch will silhouette against the wall. Once again, the light on their faces was bounce light off a beadboard, probably a 4' by 4' because it's a two-shot.

"The light on Mena's shoulder at frame right is supposed to be coming from the 'porch-light' coming in through the window, but it was most likely generated by a 1K Baby with a lot of wire on it, or a Tweenie shining through a rain-box inside the room. I used rainboxes all over the place. That way, you can place a rain pattern anywhere you want without lighting the whole damn room.

"Lighting is all just painting and creating depth. It's being cognizant of the light's values in black-and-white. In black-and-white photography, you have to create depth to create a sense of reality. In color, I still want to create depth, but I don't like to do that with the *colors*. I don't like the separation in an image to be due to the fact that a couch is gray and the walls are orange. Instead, I do it by treating the colors as values of gray and then lighting for depth." ■

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PITCH BLACK

Cinematographer: Anna Foerster

by Ron Magid

If there is a key to model photography — the art of making highly detailed miniatures look believably full-scale — it is bringing the sensibility of a traditional cinematographer to bear on subjects that are smaller than life. Anna Foerster, one of the industry's premier miniature cinematographers (whose credits include *Independence Day*, *Godzilla* and *End of Days*), explains, "Shooting models is not only technical, [but also] an extremely aesthetic discipline about movement and rhythm. Whether you shoot motion control at a frame per minute or use a high-speed camera running at 200 frames per second, you have to realize how that translates to 24 fps on screen. Consequently, I think my whole lighting approach with models is very similar to live action. I always say to myself, 'Light it as if it were a real set,' so I'm usually thinking something like, 'How high can I get a Musco light? Well, that's how high I can actually place my key backlight.' If you think of the model that way, it helps a lot in making it look real."

Frames from *Pitch Black* depict the spaceship crash detailed in the accompanying diagram.

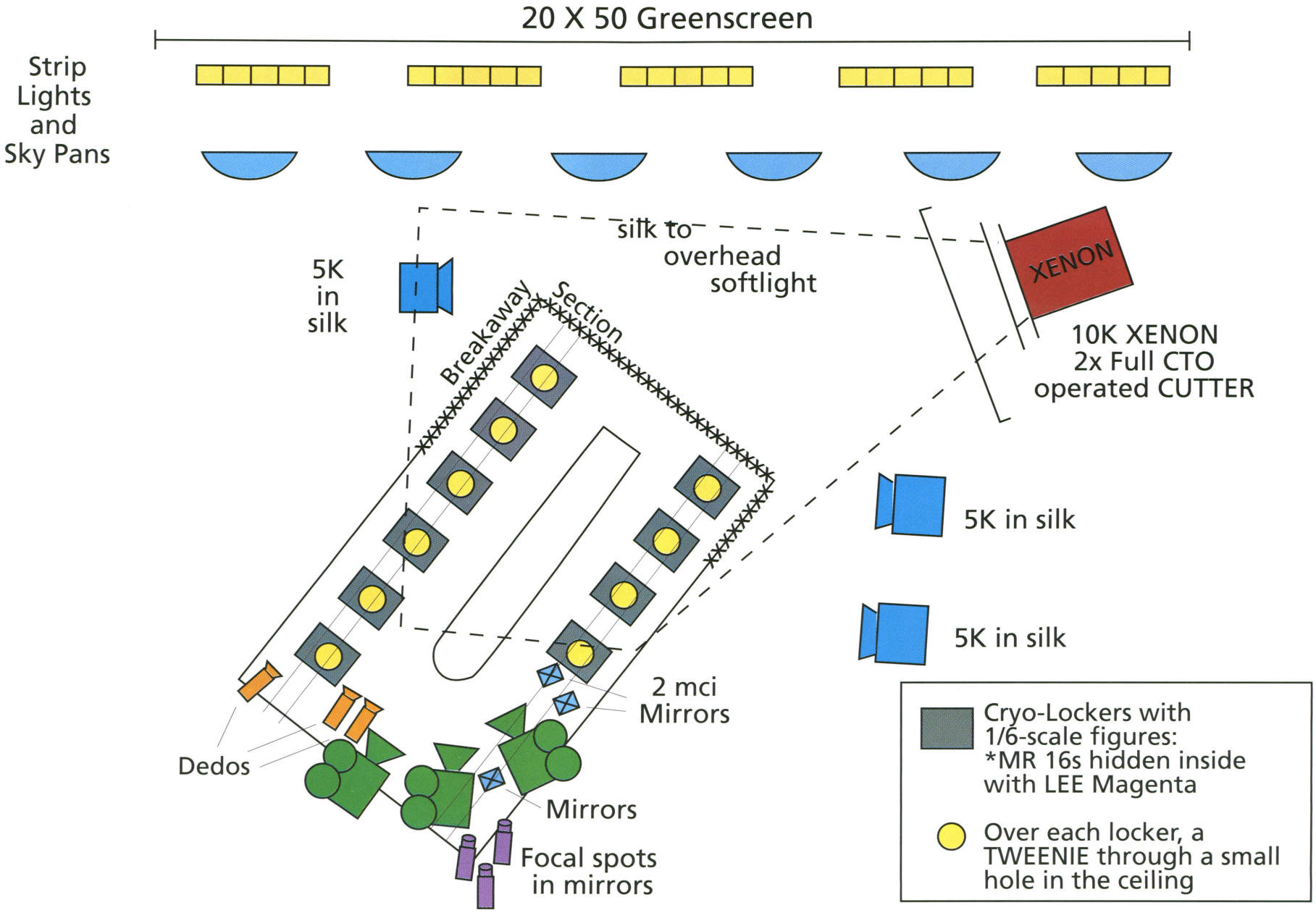
Foerster recently faced one of the greater challenges of her career on the sci-fi thriller *Pitch Black*, when she was asked to photograph the crash-landing of a spaceship on an apparently lifeless, sun-scorched planet. Director David Twohy (*The Arrival*) wanted Foerster to shoot the violent impact from *within* the spaceship. "One problem was that I had to shoot the ship crashing on the planet before [live-action cinematographer] David Eggby had even thought about how he would light the inside of the ship, and before the live-action set had even been built," she relates.

While the production's visual effects company, Hunter-Gratzner, constructed an elaborate, 1/6-scale model, Foerster contacted Eggby on the film's Australian location to try to ensure that they were on the same page visually. "He outlined a basic lighting style that was very dark and moody, and said he wanted to have a magenta color inside the cryo-lockers, where the characters would be during the crash. When the [ship's] container crashed and the pieces got ripped apart and flew out, he wanted a really strong, *hot* daylight coming in."

Once the elaborate model was finished, the Hunter-Gratzner crew mounted it within a stage for shooting. Says Foerster, "The model itself actually had to be mounted extremely rigidly on a steel deck that was screwed into the concrete floor; the pulley system that would rip the whole side of the container off was so forceful that it would have moved the model, which would have been a bad thing in terms of line-up. The model was mounted at a 40-degree angle so we could use gravity to make the cryo-lockers, which were attached by hangers to the model's ceiling, fly out when the back of the ship ripped open."

The primary camera, a Fries Mitchell, was mounted in a hole in the stage, and a second camera was placed next to it on the floor; both were shooting up into the vast miniature interior, which measured some 15' long and 3' high. Foerster recalls, "The inside of the ship was very square, with very straight lines every-

Lighting Plan: *Pitch Black* Breakaway Container/Cryo-Locker set 1/6 scale



where, so it was very graphic. On the left and right we had all the people on the ship hanging in their little cryo-lockers. My camera was on a 14mm lens because we wanted to see the whole width; to make a model look big, most of the time I go wide. We decided to shoot at 72 fps. In theory, that's not fast enough for the scale, but it helped us to maintain the scene's violence. When things rip apart in slow motion they lose speed, but if they go too fast you lose scale, so it's very hard to balance between the two without losing the impact of the violence."

Beyond those considerations, Foerster also had to maintain focus from the front to the back of the model and beyond. "The problem was that the container was really long, and we wanted to hold focus to the end," Foerster says. "Although the miniature interior was about 15 feet deep, it was supposed to be about 85 feet deep in reality. The trick was to keep everything as crisp as possible, because when the ship ripped open, we wanted to carry the focus with the debris that fell out to the green-screen. That was really crucial — the compositors needed to pull a very clean matte for the debris.

"Because of the depth of field, we had to light the model to [a stop] of T22," Foerster continues. "I used Kodak [Vision 320T] 5277 on everything except the motion-control shots. I didn't have the best experience with the Vision 500T [5279] stock that I used on *Godzilla;* I don't think it's the best stock for shooting effects involving extreme over- or underexposure. The 77 gave me a lot of latitude and enough ASA."

Foerster and her gaffer, Roger Sassen (*ID4*, *Godzilla*), spent one day rigging the 1/6-scale miniature set inside and out for the high-speed crash. Because the container model would be ripped apart during the sequence, Foerster was unable to put any lights inside the miniature. "I had to put a great deal of thought into how I was actually going to light that thing. I certainly couldn't put lights inside, because the wall gets ripped away," Foerster says. "The last thing you want to see in frame is a flying movie light! I couldn't put lights on the steel deck either, because when a third of the model gets ripped apart, they would be revealed right in frame. We ended up cutting slots in the ceiling and walls of the model, and we hung tons of lights over the model — including Par cans (Firestarters), 1Ks and Tweenies — so the light would rake down through the slots and provide a slightly backlit feel. That created a hot, fluorescent look which gave some contour to the wall detail as the light raked down to the cryo-lockers. We then hid little MR-16s with magenta gels on them inside the cryo-lockers, which actually lit the puppets of the people behind the

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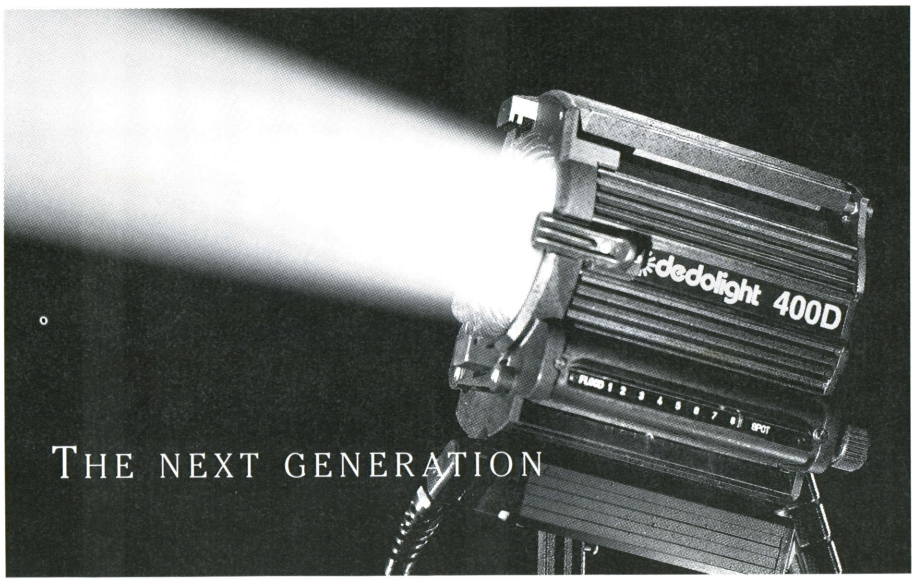

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glass windows. We had a bit of frosting on the cryo-locker windows, which caught the magenta glow and gave the glass a little magenta sheen."

Foerster actually used that magenta light as a separate fill light coming from behind the camera, reflecting in the metallic areas of the model. "The last thing I wanted was to have light coming from the camera side, but I didn't have another option at that point," Foerster admits. "I therefore used little Dedo and Leko lights almost like spotlights — very narrow beams raking down, hitting different parts of the model, picking out little tubes here and a little construction there. The highlights actually came from the front, which is not the ideal situation, but it was the only way to do it. Although [the model] was mostly frontlit, we tried to give it a backlit feel by putting little spotlights only on certain, important things. Because we had two cameras kind of blocking the entrance of the model, we didn't even have enough room to place the lights there, so we had five or six 2" mirrors mounted in front of the model to reflect little light sources into the set!"

Foerster and company had to create another whole lighting setup for the model's exterior, to illuminate the moment when the walls are ripped away by the crash impact, revealing the planet's surface and its brownish-orange atmosphere. "We had a 20' by 20' muslin overhead with an ungelled 6K bouncing into it from the ground, which gave us our skylight when the model ripped open," Foerster details. "The 60' by 20' greenscreen behind the model was lit separately by rows of strip lights on the floor and Sky pans on the ceiling. That's why the model was elevated: so we could hide the smaller lights. We shot it against a greenscreen because [the filmmakers] wanted to have live-action background plates. It was the typical situation that you should *not* do: shoot the model first and then the background plate!"

Foerster created the sunlight effect using a 10K Xenon through a double CTO gel. This created some problems, however, because the model was very deeply scored along the breakaway sections. "There were actually light leaks," Foerster sighs. "I couldn't have my strong Xenon blasting in as the daylight before the crash, because I definitely saw the transparency of the cuts. We had to put a shutter in front of that 10K and trigger it with the pyro. When the pyro went off and the mechanical effect happened, the shutter of the light opened a split-second later, blasting right into the model." ■

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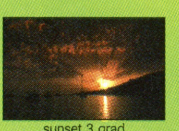
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THE X-FILES

Cinematographer: Bill Roe

Interview by Jay Holben

For this scene, aired in the second part of a two-part episode, FBI agents Mulder (David Duchovny) and Scully (Gillian Anderson) believe they've found out more information about Mulder's long-lost sister, Samantha. This particular plotline is deeply rooted in *X-Files* lore," says Bill Roe, cinematographer on the supernatural series. "When Mulder was about 12, he witnessed what he believed to be the alien abduction of Samantha. This single moment was one of the strongest inspirations for him to begin investigating the FBI's paranormal cases.

"Mulder has gradually come to believe that Samantha was not abducted by little green men, but by government agents who used her as an experimental subject for their mysterious plots. In this episode, titled "Sein Und Zeit II: Aliatope," Mulder and Scully have tracked Samantha's past to an abandoned Air Force base, where she is thought to have lived. Through the help of a psychic medium (Anthony Heald) who has the ability to sense past events, the two are led to a deserted house at the edge of the base.

"We shot the exteriors at an actual abandoned base in San Bernardino, California, and then built the interior on Stage 6 here at 20th Century Fox. Mulder, Scully and the medium come into the house and find traces of Samantha as a child. The medium then brings the two agents together and asks them to hold hands with him in a circle while he begins an impromptu séance, attempting to summon some answers about Samantha's past. During the séance, Mulder opens his eyes and sees that the room is filled with ghosts. One of the spirits, a young boy, approaches Mulder, leads him down the hallway, and shows him where Samantha once lived.

"The shot that reveals the ghosts is a long, double-360-degree shot that begins in the middle of the séance circle. As the move begins, the camera spins all the way around to cover all three actors; it then spins outside of the circle, and we see the ghosts appear during the second 360-degree rotation. Eventually, the camera moves back into the circle. The only way we could pull this off was by using a Frazier lens on a motion-controlled crane above the set, so my first challenge was to light the set to a stop of T8 for the Frazier. For the most part, we shoot the show with Kodak EXR 5298 stock, which I rate at 500, so at least I had some help in the speed department.

"Because we were working with children in the scene, we were forced to break up the shooting order a bit more aggressively than we might otherwise have done. We shot the ghost sequences with the minors first, and then went back and covered the rest of the scene.

"To create the ghosts, we did a pass with the extras in shot, and then we did a clean pass with no one in frame to make them transparent. We then did another pass with the main talent in the shot.

"For the most part, I lit this sequence by pure process of elimination; the accompanying diagram shows the only places where gaffer Jono Kouzouyan and I could put lights! About 99.9 percent of the time, I never have a light over the camera. I'm always working with sidelight or even low light coming up on the actors, never toplight.

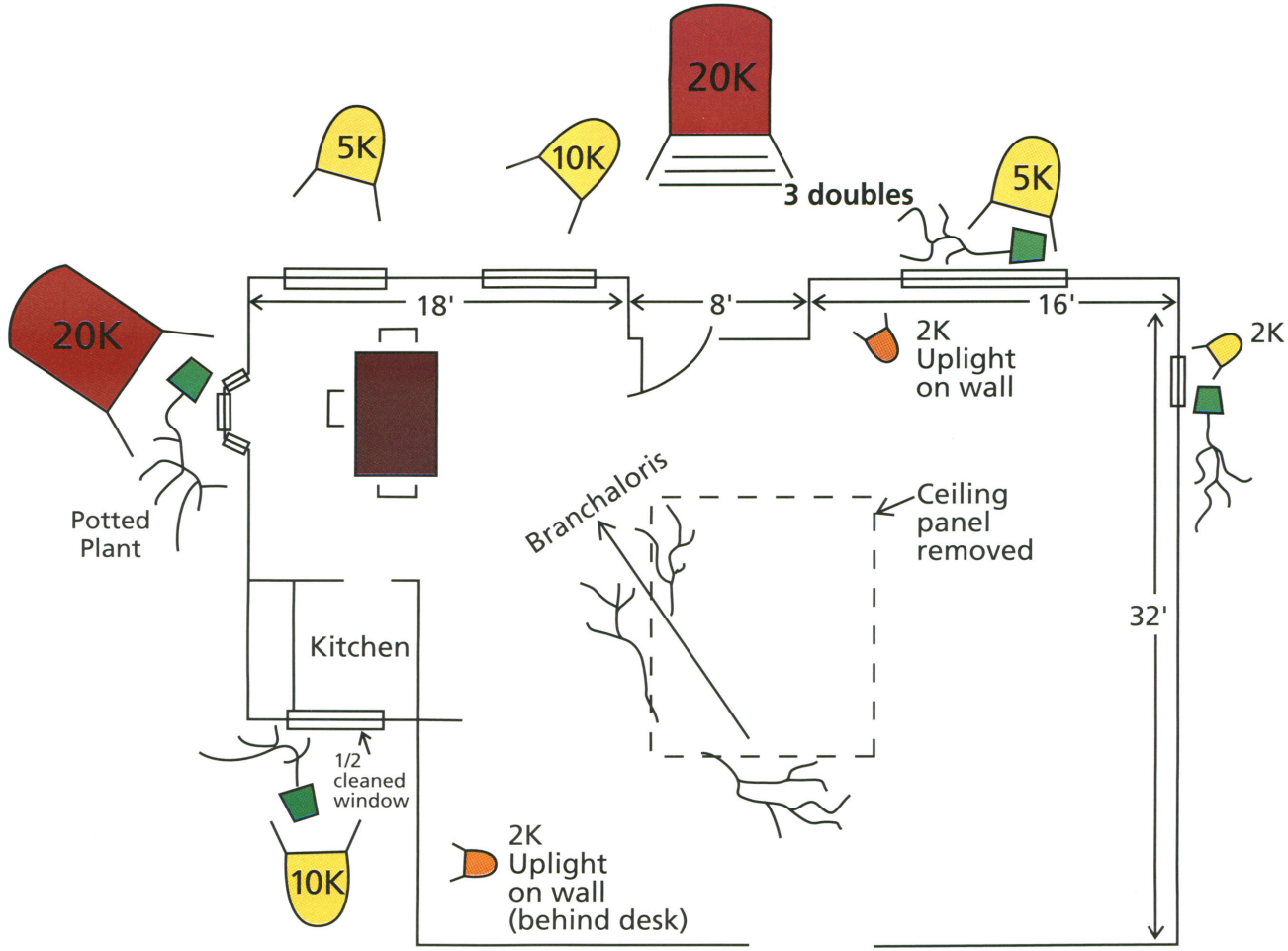
In tackling the challenging and seemingly contradictory task of "lighting for darkness," Roe (right photo, at left) and gaffer Jono Kouzouyan used light separation and silhouettes to achieve a near-complete absence-of-light look.

"In this situation, though, I was stuck. The deserted base ostensibly has no power, so there was no practical lighting at all -- everything was motivated by moonlight. During their séance, the trio end up in the middle of what would have been the living room. To get some light in there, we pulled out a ceiling panel from the set and keyed through the opening with a 20K on a scissor lift. We broke that light up with a bunch of Japonica 'branchaloris' rigs and cutters to help shape the light and make it a bit less sourcey.

"I also had to hit the walls with a bunch of little slashes of light, which is something I wouldn't normally do, because they're completely unmotivated. In this case, we had to have light on the walls to be able to see the walls through the

All of the sources surrounding the deserted Air Force base house were tungsten units gelled with Lee 1/4 CTB. A 20K was aimed through the door outside the front of the house (top of diagram). The windows in the living room (right side of diagram) were covered inside by Venetian blinds and hit with a 5K Fresnel. The dining room windows (upper left) were hit with a 5K Senior and Baby 10K. The Baby 10K's window was hidden from camera view, and that area was also used to light the kitchen doorway (lower left). The north wall of the stage (right-hand wall) had a 2K Baby Junior raking the three nook windows. A 10K outside the half-frosted kitchen window (lower left) rakes hard moonlight across the kitchen counter and helps to rim the actors at the doorway position.

Above the living room, a muslin ceiling panel was lifted out of place, and a 20K on a scissor lift (from lower left outside kitchen wall) was used to key the actors in the séance position. Lighting levels were altered slightly when the scene was re-created later. Because the Frazier lens was no longer necessary for this setup, the key areas of the scene were lit to a T2/2.8 and exposed at a T2.8.



The X-Files

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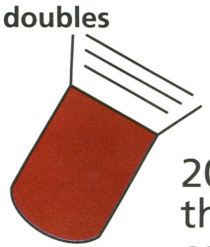

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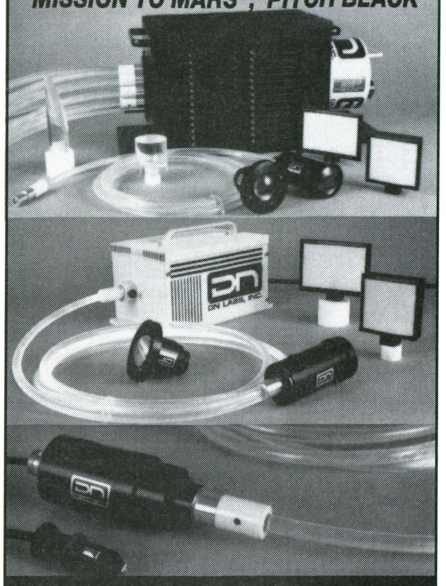

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extras. I usually like to use light on the set as separation, but for this shot I had to do even more of that than usual. If the walls were completely black, we wouldn't be able to tell that the ghosts were transparent, and the whole gag wouldn't work. I justified the use of slashes via the magical nature of the moment. I had a few 2K Baby Juniors raking up the walls in strategic positions from behind the desk and couch and whatnot.

"To me, the direction of the light is everything. Keeping light motivated is what keeps things real. The 'no light' situation is always the worst to do, because it's always a cheat. The audience has to be able to see something, so you have to create a source of light. It all comes down to what you can and cannot get away with. What is justified and what is not justified? Most of the time, we try to use windows or practicals as justification for everything. A lot of times, I'll shoot purely with practical lights. I'll just put them on a variac and dial them in so that they work as keys and practicals at the same time.

"With this scene, though, we were just kind of making it happen as we went along. I hit the windows with quite a bit more moonlight than I normally would, but it was all in ratio. When there's no other source to compete with, the moon can be pretty bright. I had to be careful, though, because the art department frosted the windows with a kind of Fuller's Earth solution, and if I hit them too hard the scene would start to look as if it was playing in daylight. That required a fine balance that I pretty much achieved by eye.

"I dealt with all of the above to make the scene appear as if all of the illumination is coming from the windows. Even though most of my sources were coming from above, I don't think it reads that way on the screen. I tend to use a lot more silhouettes when we're in 'no light' scenes. That way, you can get a good feel for what the action is without really seeing details, and it also helps to sell the idea that the characters are in the dark.

"For the motion-control shots, I lit the set to about a T5.6/8, and exposed at a T8 to put the lit details down a bit. We had a 20K coming in through the open panel in the ceiling, and 5Ks and 10Ks coming in through the windows. When the characters enter the house, they leave the front door open, and we had a 20K outside cutting through the open doorway. All of the sources had ¼ CTB on them to cool the whole look down just a bit. The real finesse was coming from the Japonica branches, which helped to shape all of these lit areas and make them feel more real.

"When I look at a shot, I'm looking for two things: does it look real, and does it look good? If it looks good, then I can get away with fudging reality quite a bit. If it doesn't, something is wrong -- either I've cheated reality too much or I've not cheated enough.

"For the most part, I find that I'm always bringing in the light from the complementary camera angle -- meaning the opposite side of the line of action. If I'm doing an over-the-shoulder shot, which favors the right side of an actor's face, I'll bring the light in from the left side. I don't like to bring the light in from the same side as the camera -- it doesn't have the right feel to me. I don't always get to follow that rule, but I do try to plan for it.

"The hard part of this sequence was reconstructing it and going back to what we'd already shot to cover other parts of the same scene. After the double-360 move, we did a Steadicam shot that carries the actors from the kitchen area into the living room where they hold their séance. It's practically another 360-degree shot, but it starts in the part of the set that we were previously using for lighting! For the ghost shot, we could cheat a bit, because even

though it was a 360-degree shot in the living room, there were parts of the dining room and kitchen that we weren't seeing in shot. I took full advantage of those areas by using them for lighting.

"Now, the frustration was that we were going back and seeing into those areas — and at the same time, we were moving into the living room where the ghost shot happens. I therefore had to re-create the lighting we'd set up before without being able to light from the same positions, because the places where we'd had lamps were now in shot. It became a game of hide-and-seek, as I tried to find the nooks and crannies that I could use to dial the lighting back to where it was.

"One area that really gave us trouble was the kitchen. The medium finds Samantha's handprint on the doorframe to the kitchen, and we had initially covered it in a raking over-the-shoulder shot from Mulder and Scully to the medium. In that shot, we only saw a small slice of the kitchen, so we pulled out the window on the back wall, which wasn't in shot, and brought in some hard moonlight across the counter. In our subsequent Steadicam shot, though, we show the window and the counter in the same shot. The window is frosted just like all the rest, and we were struggling to find a way to hit the counter with the same hard light when we couldn't light from the window. In the end, we decided to cheat the beginning of the shot slightly so that only half of the window would be shown. We also had the art department scrape the frosting off the other half so that we could light through the window and match what we'd done before." ■

Directed by Kim Manners, this episode of The X-Files *(7th season, #11) was the second in a two-part series, and aired for the first time on February 13.*

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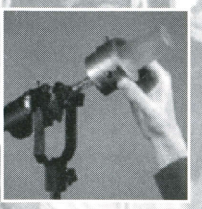
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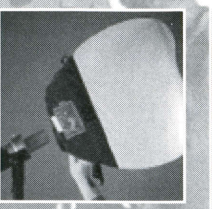
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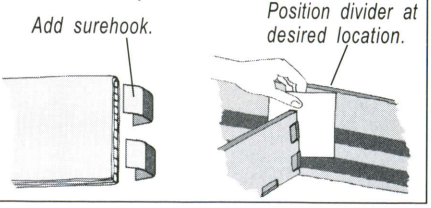

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THE SKULLS

Cinematographer: Shane Hurlbut

Interview by Christopher Probst

This is the second film I've shot for director Rob Cohen(*The Rat Pack*, *Daylight*, *Dragon: The Bruce Lee Story*)" says cinematographer Shane Hurlbut. "We had previously collaborated on the HBO movie *The Rat Pack*, for which I was graciously nominated for an ASC Award last year [see *AC* May '99]. From the first time Rob told me about the project, he recounted his time as a Harvard student, when he would wake up in the morning and walk out of the dorms to see a thin layer of fog on [Boston's] Charles River just as the sun was rising, which created a beautiful gold, glamorous quality of light.

"Our mission was to create a very rich-looking film that took the glamour photography of the 1930s and 1940s and applied it to a modern-day, Ivy League setting. The lighting style of that time was very surreal, because the stars always looked beautiful; the perfect light and the lighting on their faces was not necessarily tied into the reality of the environment. Cameramen like Lee Garmes, ASC, and Charles B. Lang, ASC were hired by individual stars to make them look their best. Lee Garmes used a technique on Marlene Dietrich where her face was 1 ½ stops hotter than the background, so the film appeared more three-dimensional, and she popped out from the scene. Rob and I thought that taking this classic, surreal/semi-theatrical lighting style and applying it to *The Skulls* would give the film a very unique look. With this approach, we set up a dualistic lighting style that contrasted the good and evil elements in the script.

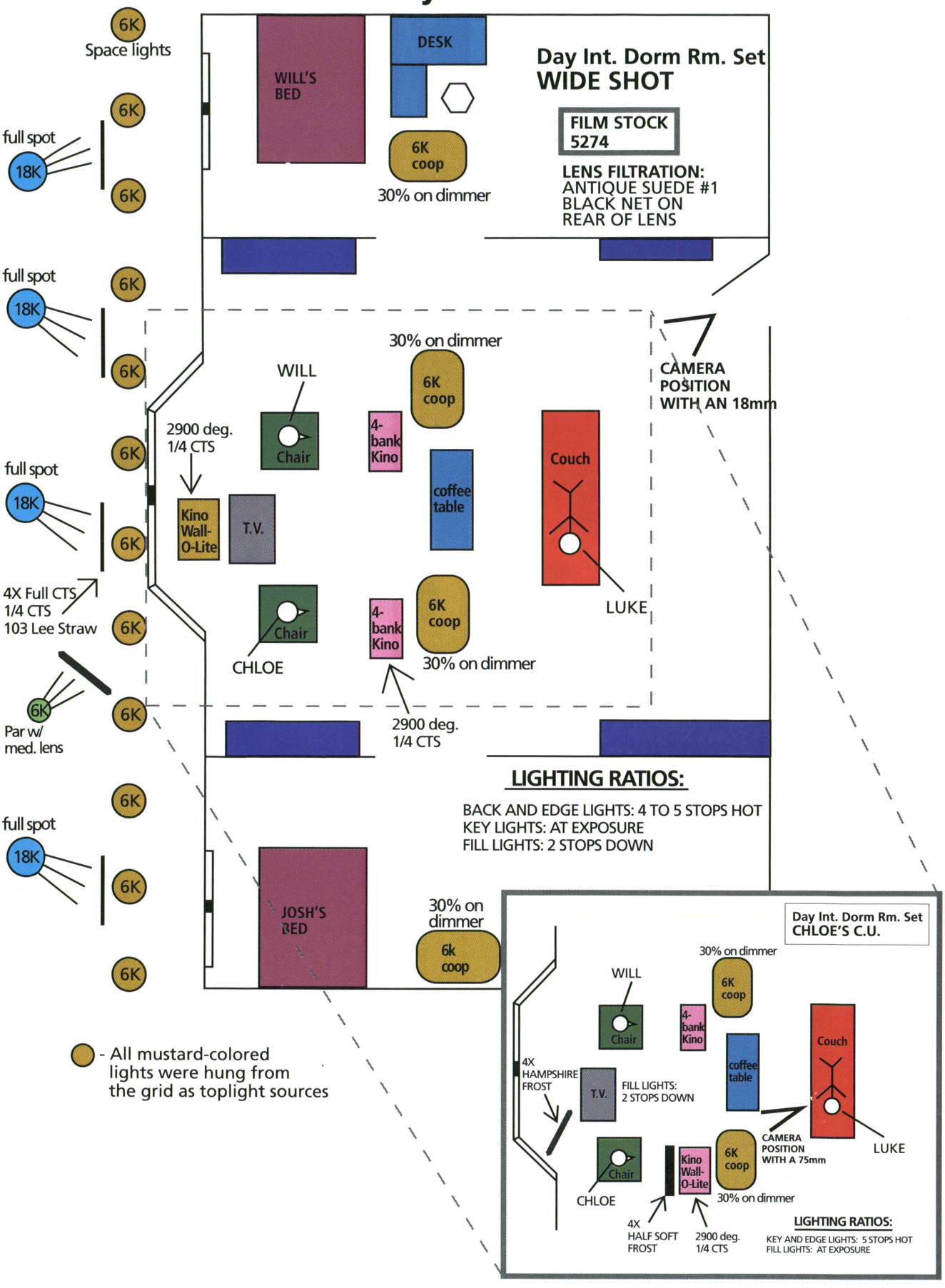
"*The Skulls* is a local boy-makes-good drama. The hero, Luke [played by *Dawson's Creek*'s Josh Jackson] is a local 'townie' attending Yale University who has been fighting all his life to get where he is. The story revolves around a secret society known as The Skulls, who, like fraternities, have a rush week to recruit new members. By joining, Luke is offered an easy way out of all of his financial woes, and for the first time in his life, he decides to take the easy route. Of course, as in any good drama, he gets totally burned by that decision.

"Although the film is set at Yale, it was actually shot at the University of Toronto. Rob and I went to Toronto to scout for locations that looked like the East Coast in the States. Fortunately, both Yale and U of T were built by the same architect, and had the same sort of Gothic, cut-stone architecture. We determined the palette of the film and decided on four basic tones. The university was gold and glamorous. It didn't necessarily look lit, but it definitely had a chiaroscuro tone, with overexposed backlights and soft, wrapping sidelight. When we weren't at the university and it was daytime, we leaned more towards a neutral white. For night exteriors, we went with more of a steely, gunmetal blue, and if it was twilight or dawn, we gave the scenes more of a cold, cyan blue.

"I think *The Skulls* is much more stylized than most films of its genre, because we made these major color shifts in almost every scene. We made some radical changes, which is much more hip and edgy than just lighting the film with nice, normal skin tones. During the earlier parts of

Actual frames from *The Skulls*. Top photo: In the wide shot, Chloe (Leslie Bibb) and Will (Hill Harper) lounge in a pair of dorm-room chairs. Bottom photo: Hurlbut adjusted his lighting scheme for Chloe's close-up (see inset in diagram on opposite page).

The Anatomy of the Punch-in



Hurlbut notes, "I think *The Skulls* is much more stylized than most films, because we made major color shifts in almost every scene."

the story, we worked primarily with images that were golden and beautiful, and I used a ratio of two stops down on the fill. As the dark side of the script unfolds and Will (Hill Harper) is killed, the lighting has more contrast to match the tone. The fill light went from two stops down to three and we started to mix up the color tones. The university wasn't always [rendered as] 'golden nostalgia,' like it was at the beginning of the story. We were able to change it to *blue* or *white*.

"While starting to light a scene in the wide shot, I'd usually light the actors with a fairly hard light, like a Source 4 Leko, which I could easily control and which wouldn't spread all over the set. With Source 4s, I can shape the light without having to set up three or four flags — like I would if I used a 5K or 10K. Instead, I might simply add a little Hampshire [diffusion] in front of it. Then, for a backlight or edgelight, I'd use either a Par can or a Source 4, again aimed through some light diffusion like Hampshire or half Soft Frost. We'd usually shoot our wide shots in two sizes — often with two cameras capturing a wide and a medium-wide. Then, when we'd go in for the medium shots and close-ups, our whole 'glamour' treatment would come into play.

"One of the most challenging lighting scenes that illustrates this approach occurs in Luke and Will's dorm room. We were on a very small stage in Toronto that was not very conducive to filming. The stage's ceilings were very low and our set's ceilings were very high. The production designer, Robert Ziembicki [*Boogie Nights*] and I worked on taking the barreled, vaulted ceilings and cutting them into a series of sections so we could get light into the set. The actual 'ceiling' curves in an arch out from the walls, so I had Robert build several interchangeable wall sections of different heights — at 7', 10' and 13' — so, depending on the given shot, we could place our backlights at the most optimum position possible.

"Outside the dorm room's windows, the art department built a 16' by 80' backing, which — if overexposed too much — looked a bit fake and lost all of its mood. Since I was motivating the sunlight through the windows — which meant that in reality, the courtyard outside would be in shadow anyway — we brought the backing down to two stops under, using 12 6K space lights to light the backing, as well as to provide a subtle 'skylight' ambiance through the windows. Additionally, Rob wanted the windows to be made of a more wavy, antique glass, which helped further 'sell' the backing's reality. My grip and electric crew did an amazing pre-rig, so all practical and overhead stage lights were on dimmers and there was an intricate pipe grid that allowed for flexibility of light placement.

"To bring 'sunlight' into the room, we had four 18Ks at full-spot and a 6K HMI Par placed in front of the backing [see diagram for more details]. These were framed out of shot to provide the feeling of hot sunlight through the windows. Robert and I had some of these old, yellowed, roll-up shades placed in front of the windows. I had first seen this type of shade in the film *Falling Down*, and the great thing about them was that not only did they help lend a rich, golden glow to the room — because of their tea-stained coloring — but they also served as a quick 'cutter' for our daylight coming in through the windows.

"When Luke enters the dorm room, Chloe [Leslie Bibb from WB's series *Popular*] is sitting in a chair, and the morning sunlight streaming into the room from the 18K is five stops hot on one side of her face [see photos on page 92]. With the rear net I was using on the camera, we can see the light just blooming the [camera-right] side of her face. There was another window behind Chloe, and I just gave it a glow with the 6K Par. In the other chair, Will is getting more of a direct backlight from another 18K. For fill on both of them, I hid two four-bank Kino Flos on the ground behind a coffee table.

"When we punched in for their close-ups with the camera, the lighting moved in as well, and became more polished. We brought in a 4' by 4' frame of Hampshire Frost to diffuse the 18K edgelight, and then added a Wall-O-Lite through a 4' by 4' frame of Half Soft Frost for a soft, wrapping front fill. I've never believed that you're absolutely locked into what was established in a wide shot on your close-ups. There are shots in the dorm-room scene where Will is getting completely annihilated by the 18K — it's almost exploding off the back of his head, while there's practically no fill light on his face except for the Kino Flo hidden on the floor. However, when we punch in for the close-up, he has this beautiful pristine light on him. Personally, I don't think that takes the audience out of the story. It may take a cinematographer out of it, but I believe you should always make the person look as good as they can.

"Now, obviously, if I've established an overall darker mood in the room, I won't have the whole room dimly lit in the wide shot and then suddenly make things hotter than hell with some contrived light on the actor when we pop in for the close-up. It's important to stay within the tones and the values of

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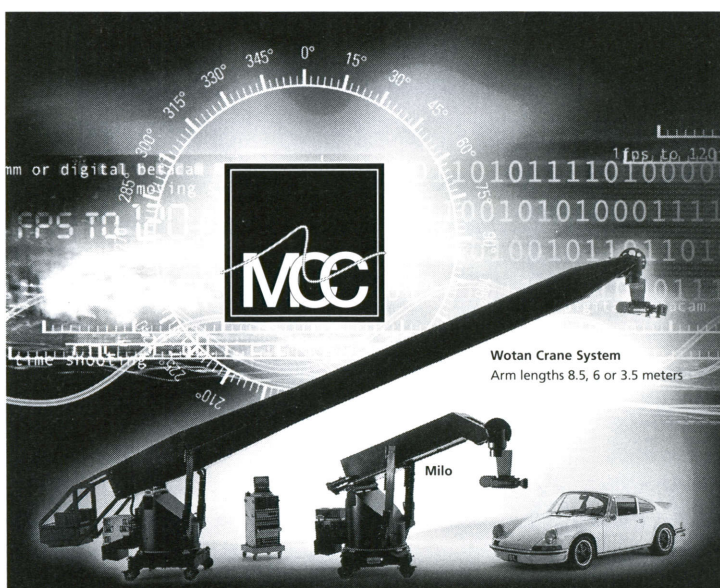
the room, while finessing the light to be as good as possible for the specific actor's face.

"When lighting for close-ups, I like to mix up my lighting's values and quality. In the wide shot, I've already established a single-source feel in the room, so when I move in for the close-up, I'll use a really hot key as a sidelight — like a Chimera with half gridcloth on it that reads one to three stops hot [depending on the mood of the scene] — and then have another Chimera with full gridcloth as a three-quarter light that is balanced at exposure. Then, to wrap into the actor's eyes, I'll add a China ball above camera which is two to 2 ½ stops under. By doing this, I'm able to shape the close-up lighting to basically any face. Each unit is controlling the light on a specific plane. It's not that any of the three combined sources are any *softer* than the other, it's more about being able to specifically place the exposure and quality of the key light into a progressively darker wrap — ending on the shadow side of their face, where I may fill in at two to three stops down or have no additional lighting at all.

"For larger scenes, I also had the crew build big 4' by 8' coffin boxes that were wrapped with Chimera cloth inside. I first used them on *The Rat Pack*, and they're designed so that we can quickly change them from half to full gridcloth. They're also wide enough so that you can aim three side-by-side 18Ks or three Maxi-Brutes through them. Additionally, after the layer of gridcloth diffusion was added, I had slots made so we could slide our Chimera honeycombs into them. That allowed us to box a light that was normally pretty unshapeable, and the 60-degree honeycombs made it a manageable source. With the 60-degree honeycombs, the light falls off nicely. On a medium shot, the light falls off at the actor's waist, which makes your eye go to his or her face; I like to use the Chimera honeycombs as a focusing element to both control the light and to guide the audience's eyes.

"When I'm working with either the Chimeras or our big coffin boxes, I always start with them [set] fairly high, and then I slowly bring them down until [the light] gets into the actor's eyes. If you start with them at eye-height, you lose the drop shadow underneath the actor's chin, which is very important. When I lit for [renowned still photographer] Herb Ritts, one thing I really took from him was the 'glamour' setup. The drop shadow under the chin, that darker area that separates the chin, makes people look more elegant." ■



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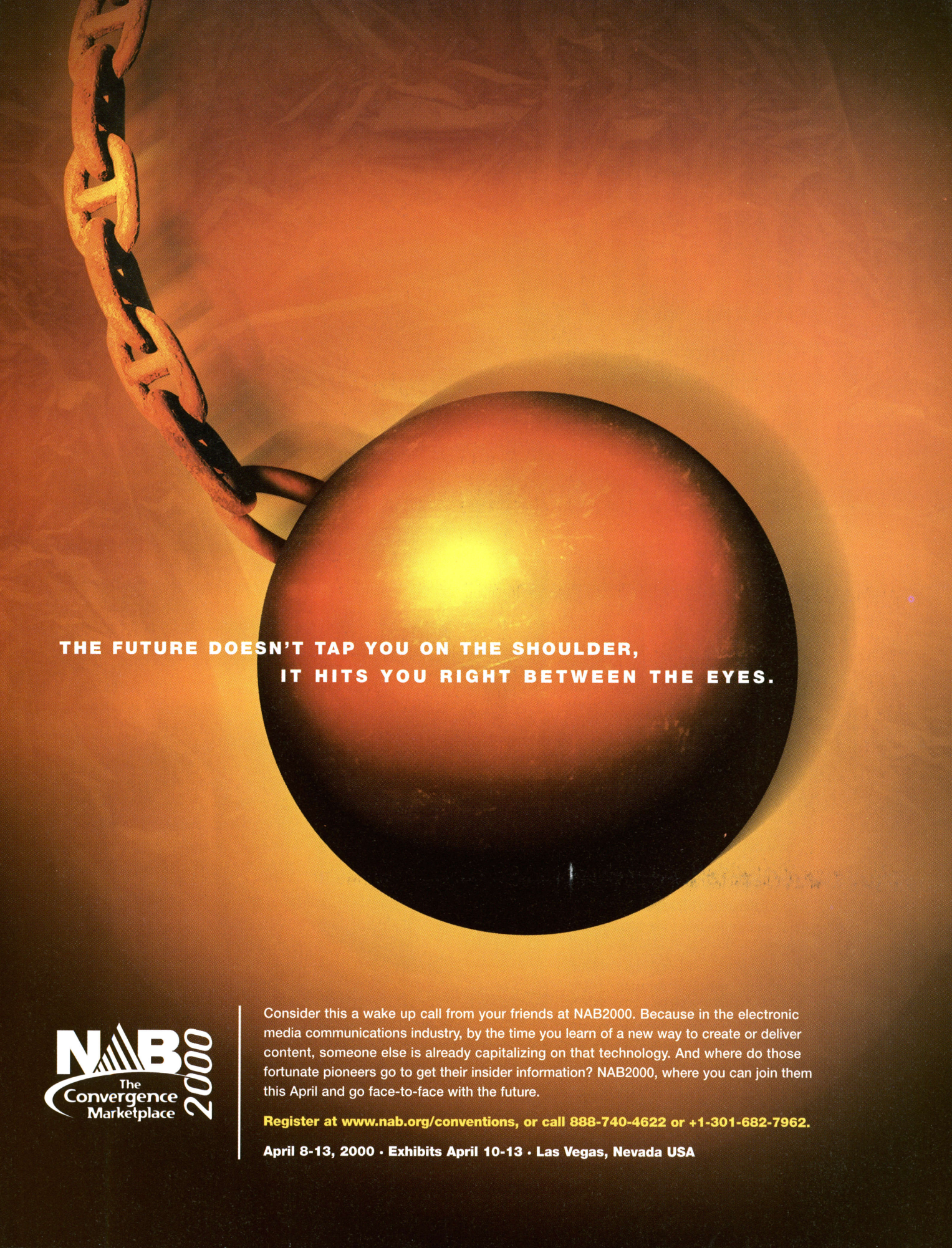
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SEX AND THE CITY

Cinematographer: Michael Spiller

by Eric Rudolph

Unlike most television shows set in Manhattan, HBO's *Sex and the City* is actually filmed in the city's streets, bars and *boite de nuits*. The racy, colorful comedy begins filming new episodes this month amid the ever-increasing bustle and tumult of the boomtown known as New York City. The show's third season will begin airing in June.

Sex and the City stars Sarah Jessica Parker, Cynthia Nixon, Kim Cattrall and Kristin Davis as four stylish, successful and single New York women who are dazzled — and often horrified — by their ostensibly glamorous, footloose love-lives.

The show is shot in the Super 16 format by two alternating cinematographers, Michael Spiller (*Drop Dead Gorgeous, Henry Fool*) and John Thomas (*The Last Days of Disco, Barcelona*). Each takes over the photographic duties for two consecutive shows, thus allowing for a full preparation period with the director, including visits to all locations.

Like most shows that shoot on location, settings are clustered in groups of two or more whenever possible because of the vagaries of moving production gear around an impossibly crowded island. (*Sex and the City* is not entirely shot on location; sets, including the apartments of the leads, reside at Silvercup Studios in Queens, near key sets for HBO's recently returned smash *The Sopranos*.)

Miranda (Cynthia Nixon) and Mr. Hair Plugs dine in Manhattan at a swanky Middle Eastern-style restaurant (actual frames).

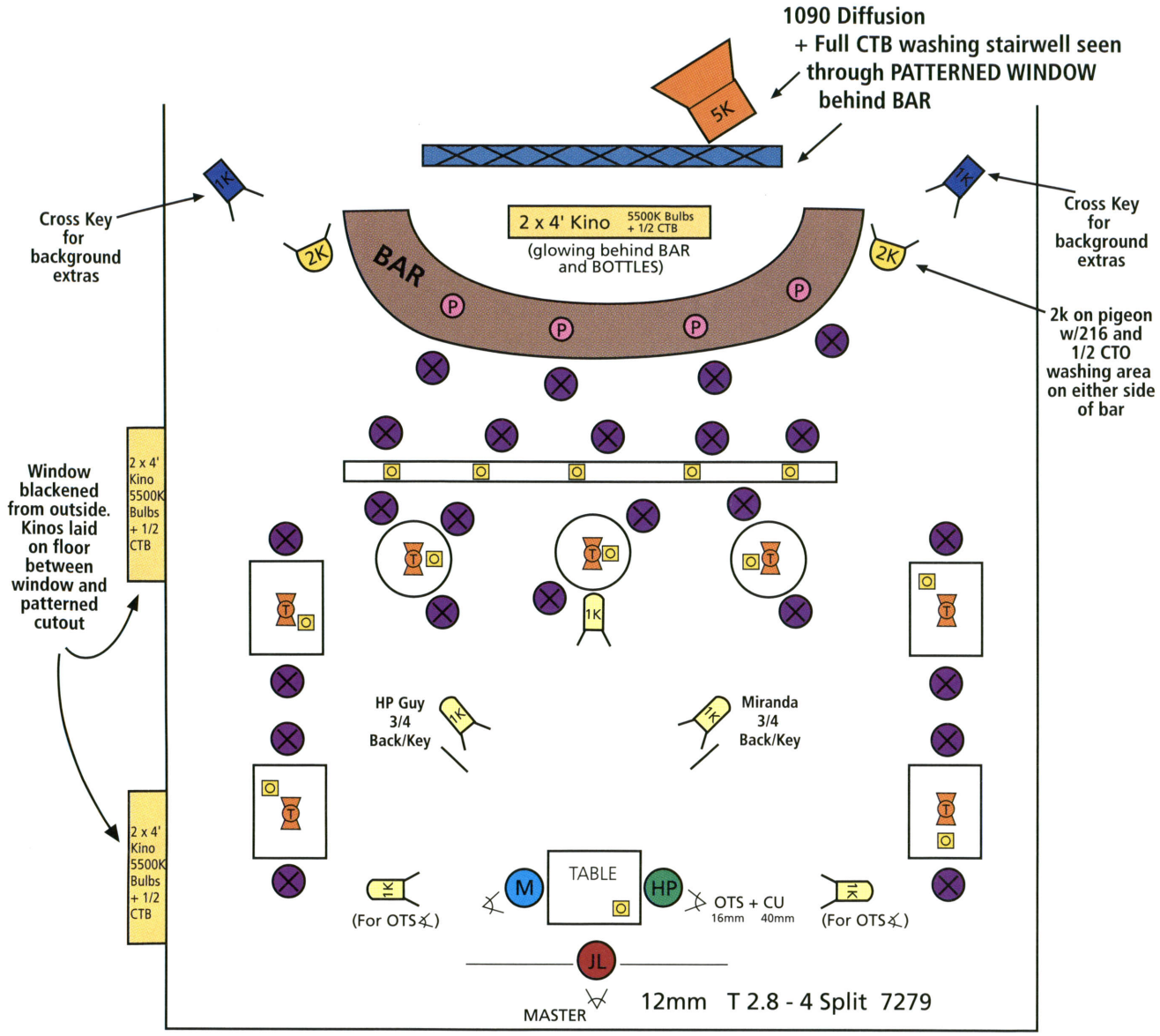
The tight scheduling of five days for each half-hour show normally prevents the cinematographers from using feature film-like lighting setups. However, Spiller tries to work around these limits and aims for a big-screen look whenever he senses the opportunity.

For an episode late in the second season titled "Evolution," the script called for Cynthia Nixon's character, Miranda, to have a bad first date in a sushi bar with a fellow lawyer sporting glaringly bad hair transplant plugs. "We found a restaurant with a Moroccan feel on the Upper West Side that was also near a night exterior and a pastry shop we needed," explains Spiller. "As a result, the script's sushi bar instantly became a Middle Eastern eatery."

In the large, upstairs dining room of the restaurant, Spiller saw one of those rare chances to add feature-like scale and depth via the lighting. To do so, he used nearly 40 motion picture and practical lighting instruments for the master shot.

Putting the large room onscreen in a big way was not without its difficulties. "The dining room was wide and fairly deep, and because we work in the widescreen Super 16 format, we couldn't use light stands," he explains. (Although shot in a widescreen format, *Sex and the City* is aired in the conventional 1.33:1 television aspect ratio.) "The inability to use stands wasn't a great hardship, because our strategy in restaurant scenes is to bring in practicals to cover the background action as much as possible," Spiller explains. "We used small table lamps with 40-watt household bulbs, which was a good way to add some life to the background without a huge energy expenditure on our part."

The small table lamps were placed on seven dining tables around which extras were seated; five more of the small practicals were lined up on a railing that separated the bar area from the dining room. (The practicals were dimmed down about 30 percent for warmth and contrast



M = Miranda

HP = Hairplugs Guy

= Extras

For close-ups we used a 2K zip through a 4'x4' 1090 frame from the same direction as in Master

T = Snooted Tweenie aimed directly onto tables

= Practical Lamps or Dimmers w/40 watt bulbs @ 70% 3-stops Hot to spot meter

P = Four Peppers spotted onto bar from above

JL = Skirted Japanese Lantern (19") with Ph211 Bulb @80%. Double net bottomer to keep foreground dark

1K = 1K Fresnel w/Lee 250 inside doors

Sex and the City
"Evolution"

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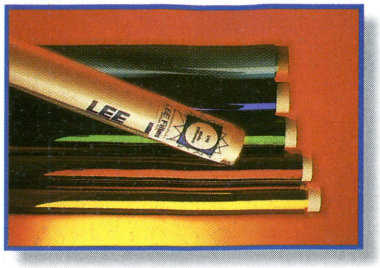

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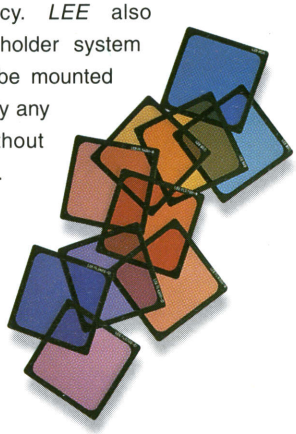

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SEX AND THE CITY

control, but as onscreen sources, they still ran about three stops over key.)

The fact that the production was nearby working on the other locations also helped Spiller find a way to light the big space in a compelling manner. "We were able to send in a couple of riggers to set up a ceiling-mounted Speedrail grid, from which we hung seven snooted Tweenies," Spiller notes. The Tweenies were dimmed 10-20 percent and aimed straight down at the white tablecloths on the tables around which the extras were seated. "The Tweenies bouncing off of the tablecloths gave us a fill that worked very nicely with the warm practical table lamps." The bounced Tweenies also enhanced the contrast of the scene by more clearly delineating the extras from their surroundings.

Continuing the small-fixture theme, four Peppers were hung from the Speedrail and pointed down at the surface of the large, curved bar that sat at the back of the room, right in the center of the master shot.

One feature that initially attracted Spiller to the restaurant location was the unusual carved, wooden Middle Eastern-style screens that stood in front of the restaurant's windows; these were matched by a larger screen behind the bar. The cinematographer cleverly pressed these decorative elements into service: "The unusual window treatments were like built-in set dressing."

Although the scene ostensibly takes place at night, it was shot during the day, so the crew blacked out the restaurant's windows. Spiller used the foot of floor space between the windows and the wooden window treatments to insert two 4' Kino Flos under each window. "We used daylight-balanced Kino bulbs and cooled them even more with one-half CTB," he notes.

The result is a lively, cool blue wash on the white curtains that cover the windows, which is seen through the wooden cutouts. Says Spiller, "I liked the cool blue and the way it contrasted with the warm tones of the room," which featured red, off-white and beige walls. While working with the larger wooden cutout behind the bar (which stood in front of a wall instead of a window), Spiller washed the wall with a 5K through 1090 GAM diffusion and full CTB.

Between the big wooden cutout behind the bar and the bar's actual surface, he used the combination of Kino Flos and ½ CTB to add a cool glow that was picked up by the liquor bottles.

To light the principals in the scene, Spiller used small, hard lights with a simple diffusion approach — something he doesn't do too often on *Sex and the City*, where large, soft lighting sources are the norm. "We chose to hang small lights because we needed to get the instruments up out of the frame for the wide master shot. We also had to keep the weight limits of the Speedrail in mind," he explains.

Cynthia Nixon and her date, seated at their dining table, were cross-keyed for the master profile shot with a pair of 1K Fresnels aimed like three-quarter backlights. Spiller submits, "The key light for Cynthia was coming from over her date's shoulder, and so it wrapped around him a bit, and vice-versa." The hard lights were diffused mildly with a small piece of #250 frost placed in the barn-door holder — right up against the Fresnel lens, rather than clipped to the barn doors, "so we could use the doors to control the spill." A straight 1K Fresnel backlight was also hung from the grid; barn doors were used to keep the spill of the principals' table.

The only front-lighting for the master shot was a 19" Chinese lantern, fitted with a Number 2 Photoflood and hung quite close to, and just above, the 12mm lens on the Aaton XTRprod camera. The top three-quarter section of the lantern was skirted with black fabric to direct

the light primarily onto the principals' faces; the rest of the lantern was covered with a double netting to keep the light from reflecting off a railing, the closest object to the camera.

Extras at the bar were, like the principals, cross-keyed with 1K Fresnels with barn doors. The side walls were washed with 2K Juniors on Pigeon stands aimed through grids and ½ CTO, to emphasize the warm wall colors.

For close-ups, Spiller moved in a pair of 2K Zip soft lights diffused through a 4' x 4' frame of 1090 GAM diffusion. 1K Fresnels were also hung from the grid to backlight the over-the-shoulder shots.

Spiller shot with a split T2.8/4 aperture on Kodak Vision 500T 7279 stock. "I think the fast stock works wonderfully in Super 16," he testifies. He generally employs EXT 7248 100T for day exteriors; Vision 200T 7274 is used for higher-key studio interiors, where the lighting is entirely tungsten.

As mentioned, the use of hard Fresnel sources is unusual. "Big, soft sources are the norm on *Sex and the City*, and when we have all four leads together at a table, which happens in every show, it sometimes feels as if we're lighting by the square foot, with as much as 288 square feet of diffusion from two 12' x 12' frames," Spiller muses.

The two big frames are not always used for diffusion, however. He explains, "We usually have heavy page counts for the scenes with all four actresses, so we'll use two cameras. We want to lend some direction to the light and not always have this one big flat source. To try to pick up some contrast, we'll increase the key-to-fill ratio by using one of the 12' x 12' frames to bounce a big light that's also going though a heavy grid." Any light that's handy tends to be pressed into service in these situations. "When we're using our big diffusion/bounce frames, the instrument isn't that crucial," Spiller maintains. "We've used 10K Fresnels, Maxi-Brutes, and nine-lights."

Spiller concludes, "We have to balance the desire to avoid flat, comedy television lighting with the reality of working with four women" — who, given their glamorous, single characters, have to look great all the time. The safe, soft light from the big sources leads to some frustration, so Spiller is always working to add some shape and definition to his illumination. "Like many cinematographers, I'm always looking for a nice hard cut from a big, soft source," he jokes. ■

Directed by Pam Thomas, this episode of Sex and the City *(2nd season, #23) aired for the first time on August 15, 1999.*

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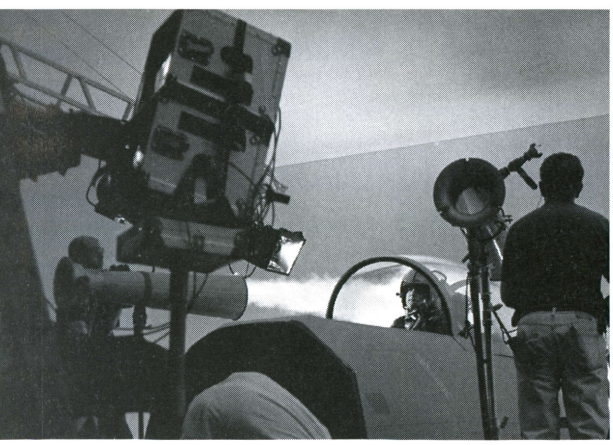
JAG

Cinematographer: Hugo Cortina

by Douglas Bankston

With its tales of naval warfare, fighter combat, lunatic terrorists waiting in the wings and other military crises threatening world safety, *JAG* isn't an ordinary prime-time courtroom drama. Criminal investigation is its main theme, but its military milieu allows for plenty of gripping action.



Above: A look at the F-14 mockup that Cortina (right) lights and shoots to simulate actual aerial maneuvers.

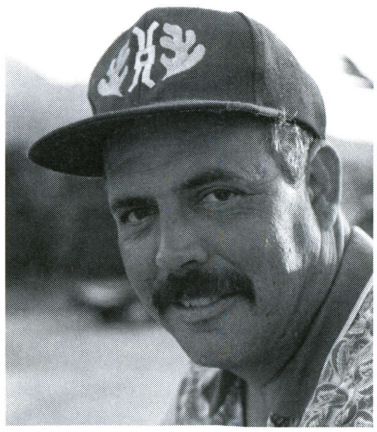
Created in 1995 by Donald Bellisario, *JAG*, which stands for Judge Advocate General (the senior military legal officer and adviser), was originally showcased on NBC. In 1997, it moved to CBS, where it found new life and a tremendous audience following. In the series, ace fighter pilot-turned-prosecutor Lt. Cmdr. Harmon "Harm" Rabb, Jr. (David James Elliott) and his defense attorney counterpart, Lt. Col. Sarah "Mac" MacKenzie (Catherine Bell), must match legal wits in and out of military court to solve mysteries, crimes and other dicey situations.

In command of *JAG*'s photography is Hugo Cortina, and the assignment marks his first venture into long-format cinematography. Cortina served as a gaffer for 17 years on such films as *Fast Times at Ridgemont High*, *Starman* and *Addams Family Values*, and worked as a director of photography on numerous commercials in the 1980s and 1990s. "I'm not weak in the lighting department," he assures with a laugh. "During all of my years as an electrician and a gaffer, I began realizing that the director of photography's job is the most challenging position to be in. You have to be artistic on one side and efficient on the other. I enjoy that."

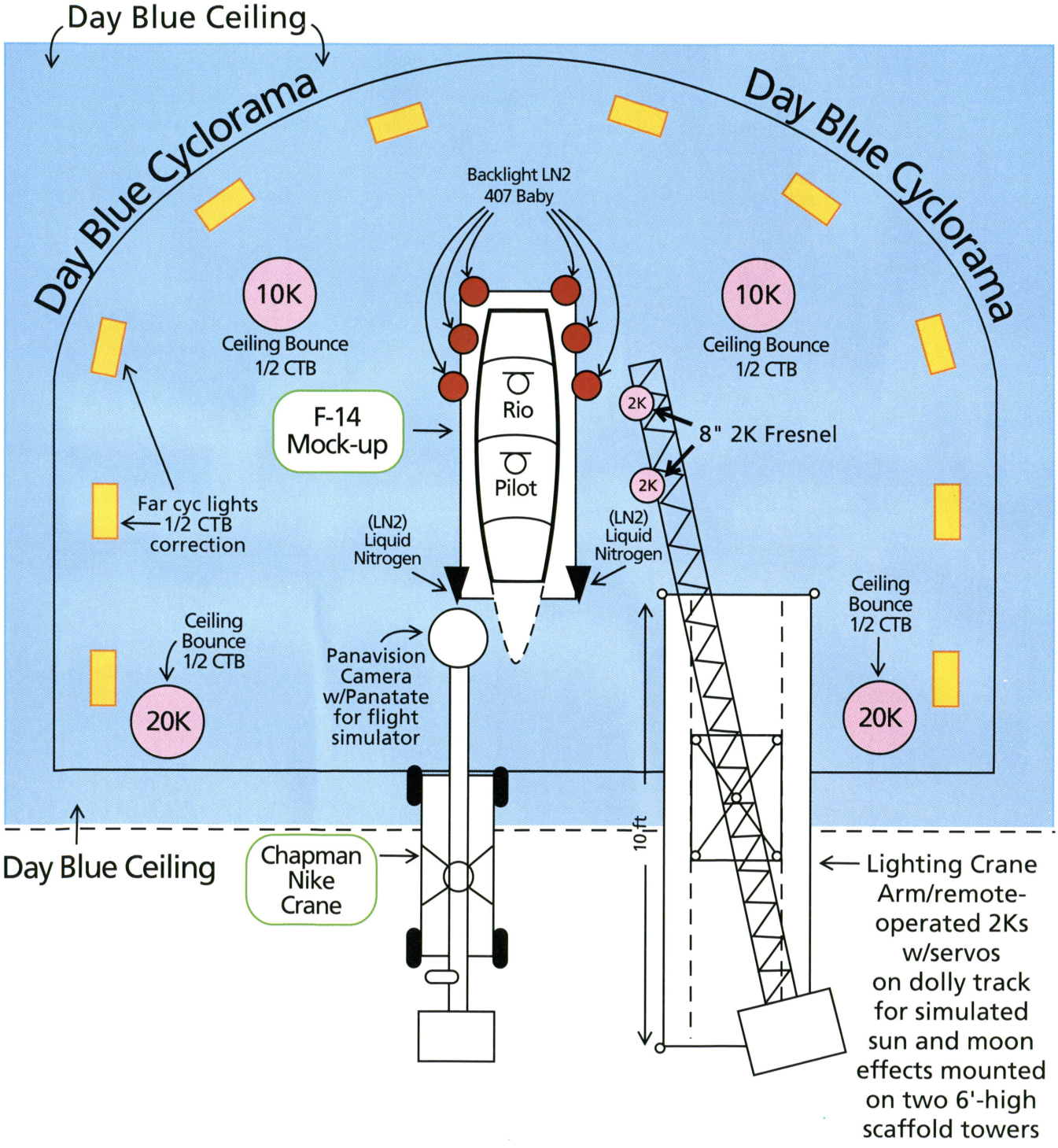
Cortina, whose photography on the television production earned him Emmy nominations in 1998 and '99 and a '99 ASC Award nomination (see *AC* Oct. '98, May and Nov. '99), applies his artistic and efficient photographic strategy to create a very natural, realistic look for *JAG*. This style also translates into the series' many action scenes, which include aerial sequences featuring Navy F-14 Tomcat fighters. Cortina's pilot close-up work must accurately match the previously acquired stock footage with which it is intercut.

The stagebound flight maneuvers are conducted using an F-14 mock-up that includes a cockpit replica with real pilot and navigator ejection seats arranged in tandem; however, the "aircraft" lacks wings and a tail. Whereas typical flight simulation is accomplished using a gimbal, this particular simulator is stationary — it is the camera and lights that move to create the appearance of flight. "This is something you won't see on an episodic television show very often," Cortina attests. "It's quite a large operation."

To conduct these flight operations, a unique lighting rig was developed. "We have a remote-control-driven lighting system," Cortina explains. "It's a big, aluminum truss that our special effects coordinator, Larry Fuentes, had put together. He built this unit with servos to drive two Mole-Richardson 8" Juniors that are about eight feet apart [on an arm]. The two 8" Juniors on the arm simulate the sun, and I leave those raw tungsten. The big aluminum truss arm is placed on top of a Cinevator that will elevate the arm to the necessary height during a maneuver. The Cinevator is mounted onto a platform that has skateboard wheels underneath it and rides on a rail track mounted on top of two six-foot-tall parallels that have been secured together. On top of these parallels, the grips and electricians will push and drive the arm. One guy will control the arm's up-and-down motion, and the other guy will push the Cinevator forward and backward to create a moving shadow. The 8" Juniors are driven by a remote-control transmitter and receiver. Much like using a videogame joystick, one of our electricians controls the lights' movements left and right and up and down to keep them pointed at the cockpit as the arm is flying through the air. The trick is that the guy controlling the arm has to maintain the same



JAG
Topographical
F-14 Mock-Up



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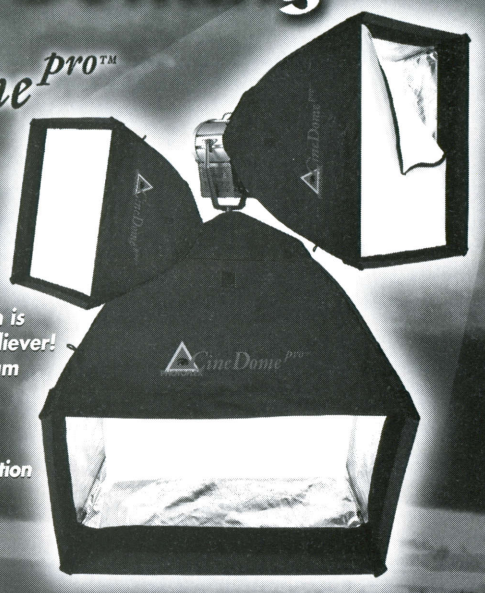

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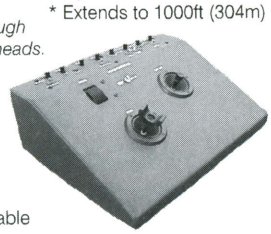

distance from the plane in order to preserve the same general f-stop on the pilot."

A blue background lit by Far cycs replicates the sky, while two 20Ks with ½ CTB to the front of the jet, and two 10Ks with ½ CTB to the rear, are bounced into a blue ceiling to provide a bluer skylight fill. The pilot is lit by whatever comes from the two sun-simulating 8" Juniors, and the bounce from the sky.

In order to give the impression that clouds are whizzing by the jet's canopy, Fuentes' crew shoots liquid nitrogen gas (LN-2) directed by fans past the cockpit, the gas is backlit by six Mole-Richardson 407 Babies (1K Baby Solarspots).

For nighttime flying sequences, Cortina needs to make only a few, minor lighting adjustments. "When we do night scenes," he elaborates, "my gaffer, Mike Weathers, will place a couple of small Kino Flo units [inside the cockpit]. We'll usually run some red light and some slightly orange light. Then, on the lighting rig, we'll change to a ½ blue gel [for the 8" Juniors]. We add blue gels to those 407 Babies so that you see the LN-2 liquid nitrogen go by, but it's bluer. What you have is a moonlight outside and a kind of warm reddish-orange light inside the cockpit.

"During both day and night situations," he continues, "I usually have to bump up the light to work at T2.8, so we can use the Primo 11:1 zoom lens to make easy size adjustments. We go anywhere from a 135mm to a 275mm focal length."

To photograph the jet mock-up for daytime sequences, Cortina uses Kodak Vision 320T 5277. For night scenes, he opts for either Vision 500T 5279 or Vision 800T 5289, depending on what he is trying to do.

In addition to the shifting lights, the camera must also conduct complex movements to feign flight. A Panavision GII is secured to a Panatate 360-degree rotating camera

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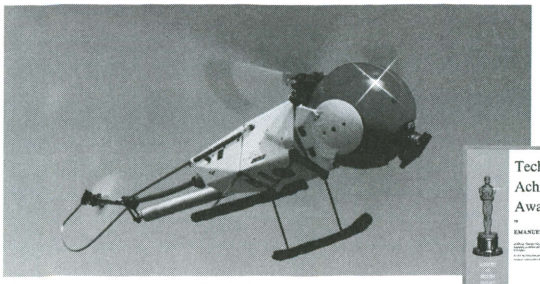

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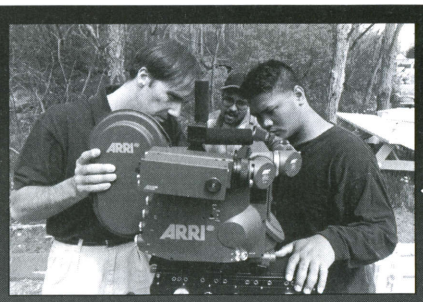

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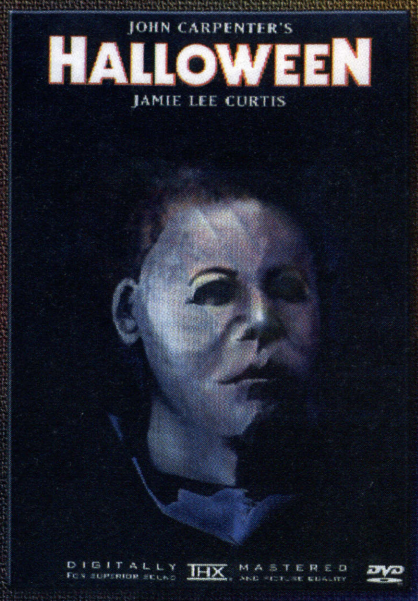
JAG

Panatate 360-degree rotating camera mount fastened to a Chapman/Leonard Nike stage crane, providing fluid camera movement. Key grip Craig Pieffer operates the Panatate while the camera is manually shaken. "Billy Webb is our camera operator, and we shake this camera so much and so hard that both he and I will trade off," Cortina details. "I relieve him quite often, because it's very physically demanding. We tried [the Image Shaker], but it was too mechanical — you could see its repeating motions. The funny thing is, all your motions are backwards; if the pilot and aircraft are going up, you've got to tilt the camera down. It's bizarre and takes practice."

All of this hectic camera movement tests the skills of focus puller Brian Bernstein. Cortina says with admiration, "He seems to have a little radar built into his brain. The crane arm is going all over the place, so the camera distances are constantly changing. There's really no way to get marks or anything. You've just got to be a heck of a good focus puller."

Cortina inherited the F-14 mock-up rig from original *JAG* director of photography Thomas Del Ruth, ASC. "We've made our refinements from there," he notes. "We've changed the way we do the LN-2 gas, and we've changed the lighting rig, which originally used ropes and pulleys to move the lights. Now it's all done by remote control."

A good deal of time is required to choreograph the camera and light movements. "I'd say that on average, it takes about an hour and a half to set everything up, and probably another half-hour to an hour to choreograph all the movements," Cortina concludes. "Once it gets going, it goes very smoothly. We're on a television series here, so an hour is a *long* time. But once we show up [on the set,] it's all pretty much clear-cut. We try to see the footage that we are cutting in and out of, and then we take it on." ■



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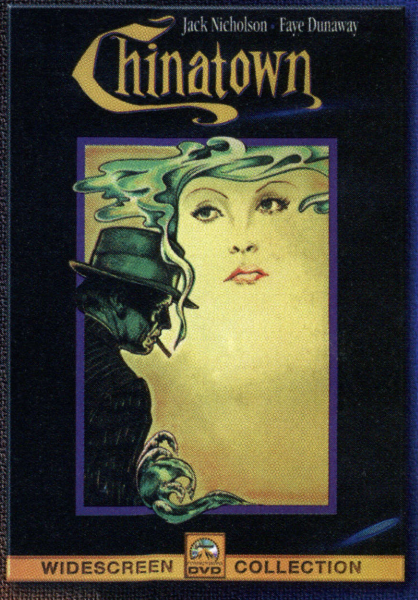

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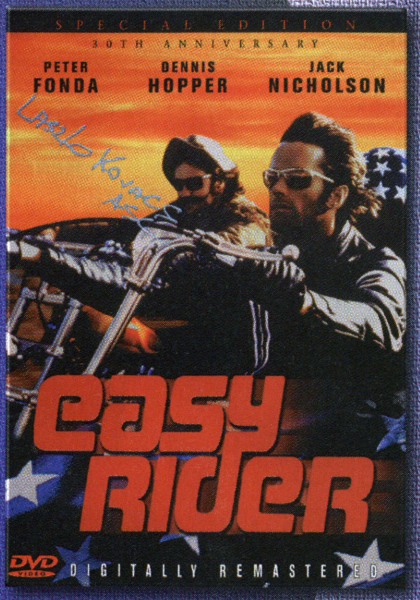

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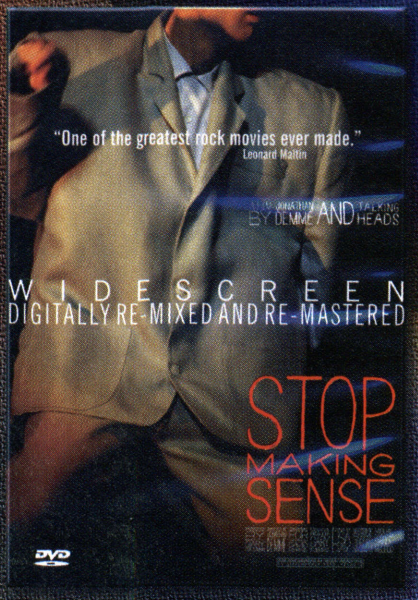

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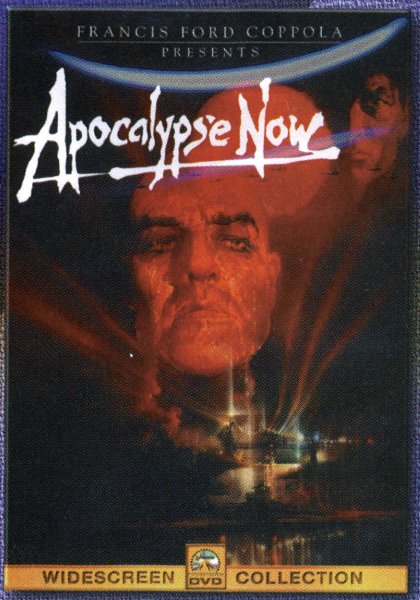

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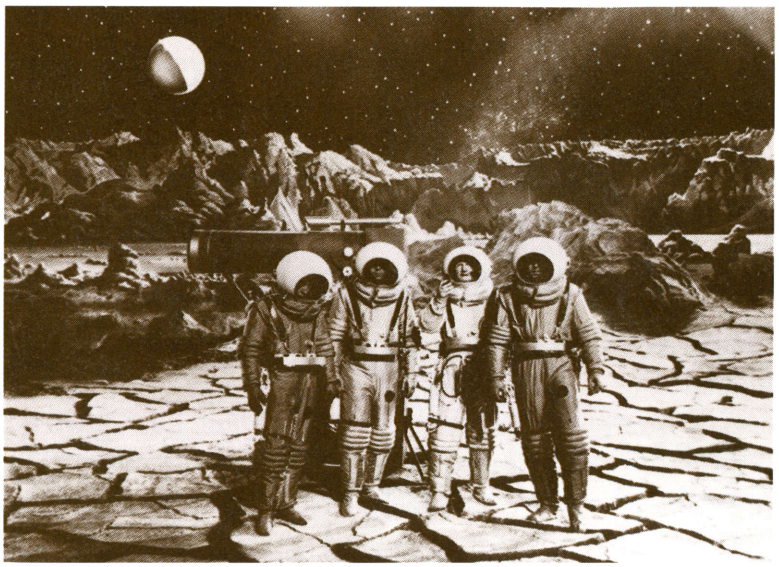
Lunar Ambition

Producer George Pal lined up some seasoned Hollywood pros, including director Irving Pichel and cinematographer Lionel Lindon, ASC, for his pioneering 1950 sci-fi film *Destination Moon.*

by Jan Alan Henderson



"I want to do this job because it's never been done… It's research; it's pioneering. What's the moon? Another North Pole? Another South Pole? Our only satellite, our nearest neighbor in the sky! It's a venture I don't want to be left out of."

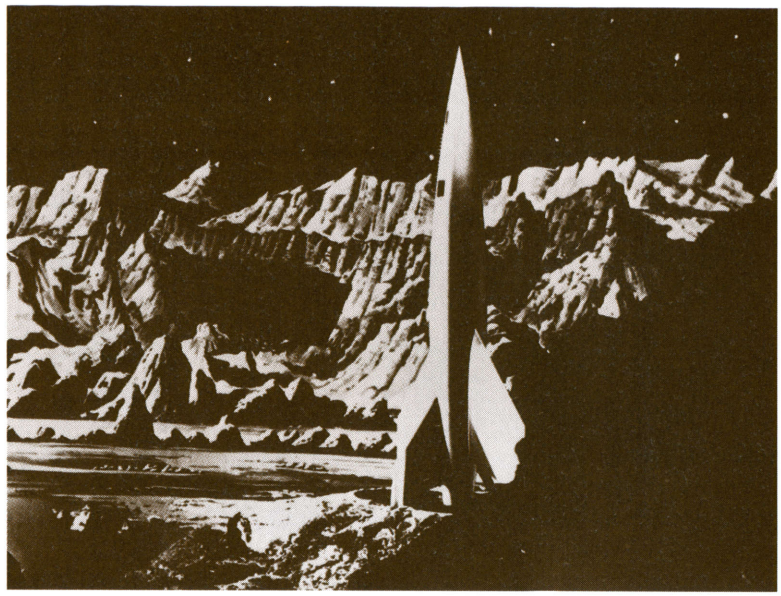
— Jim Barnes,
American industrialist,
in *Destination Moon*

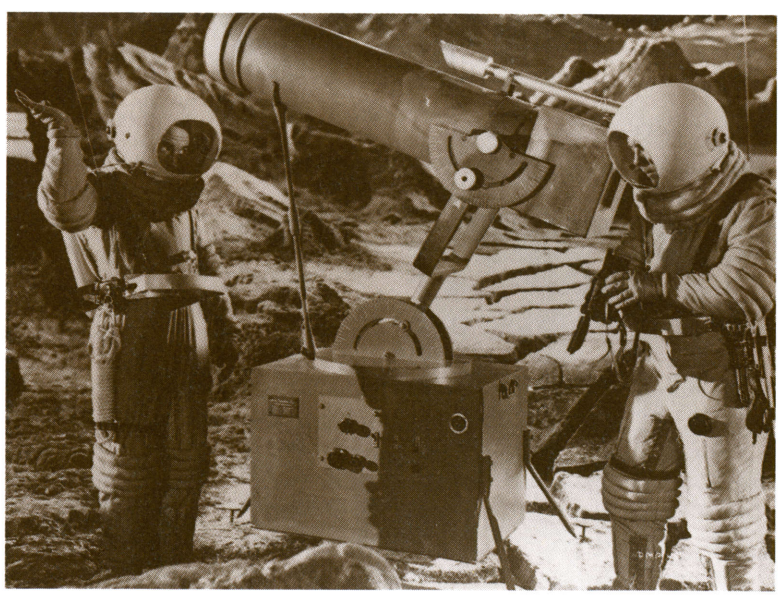
When Jim Barnes persuaded a top-secret gathering of American businessmen to privately finance a space expedition during this key scene in *Destination Moon*, he might well have been outlining the creative

philosophy of the film's producer, George Pal. A native of Cegleg, Hungary, Pal had been the head of the cartoon department at UFA Studios, Berlin, for two years before fleeing Nazi Germany in 1933. For the next six years, he made animated commercials that were shown in movie theaters throughout Europe. While producing a cigarette commercial using stop-motion animation, Pal began experimenting with three-dimensional animation. He eventually opened his own animation studio in Eindhoven, Holland, and began creating Puppetoons, short-subject cartoons using puppetry, which became popular throughout Europe.

Paramount Studios invited Pal to bring his Puppetoons to Hollywood, and he and his wife left Holland two months before the Nazis occupied the country. From 1941 to 1947, he created more than 40 Puppetoons for Paramount, earning seven Academy Award nominations and a special Academy Award for his innovative animation techniques. Pal was determined to create feature-length motion pictures combining live action with special visual and sound effects. Although his first attempt, *The Great Rupert*, whose cast included Jimmy Durante and an animated squirrel, proved to be a box-office disaster in 1949, Pal was by then already at work on *Destination Moon.*

Famed science-fiction writer Robert A. Heinlein had approached Pal at a party and asked him to produce a script based on his novel, *Rocketship Galileo.* (The final script would be co-authored by Heinlein, Rip Van Ronkel and James O'Hanlon.) For the project, whose working title was *Rocket to the Moon*, Pal teamed up again with director Irving Pichel, a Harvard graduate and veteran actor/director who had directed *The Great Rupert* for Pal. Pichel had been credited with discovering Natalie Wood while directing





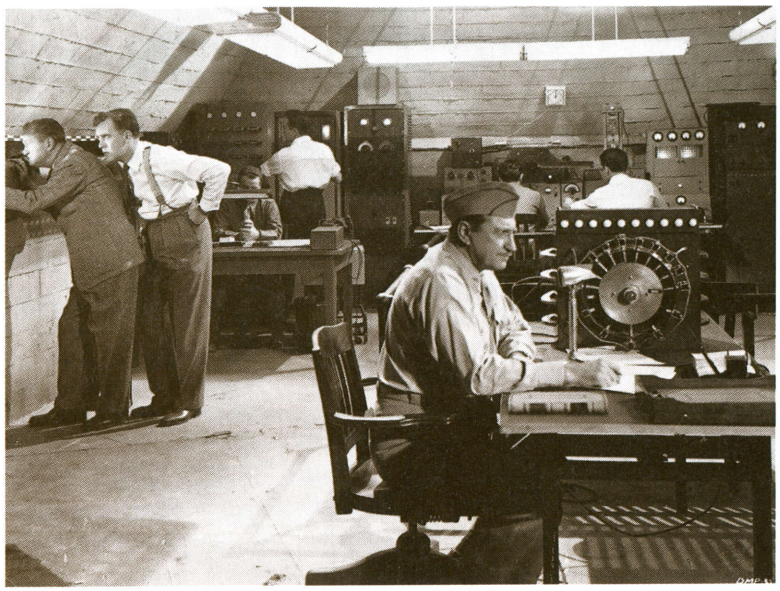
Opposite: The cast (top photo) and crew (bottom) stake out the moon. Note that the "cracks" in the planet's surface become smaller toward the back of the set; this use of forced-perspective helped to create the illusion of distance. This page, top: The *Luna* has landed. Below: Astronauts Joe Sweeney (Dick Wesson, left) and Jim Barnes (John Archer) set up their research equipment.

The Happy Land (1943), and he had also directed *Hudson's Bay* (1940), *Tomorrow is Forever* (1946), *O.S.S.* (1946) and the film noir classic *They Won't Believe Me* (1947).

Pal and Pichel quickly added cinematographer Lionel Lindon, ASC to their production. Lindon, with whom Pichel had worked on *Medal for Benny* (1945) and Pal's *The Great Rupert*, had also shot the classics *Going My Way* (1944), *Road to Utopia* (1946) and *My Favorite Brunette* (1947).

Pal soon discovered that his film was not the only one in production that would attempt to represent the first manned space expedition; producer Murray Lerner was busy with *Rocketship X-M*, a bleak tale about a moonbound expedition that lands on Mars after being blown off course. There were key differences between the two films, however. *Rocketship X-M* was a black-and-white production that boasted romantic intrigue and a serial-style story, whereas Pal, working in Technicolor, was determined to feature realistic images based on the technology of the 1950s. (Some have speculated that when Lerner caught

Lunar Ambition

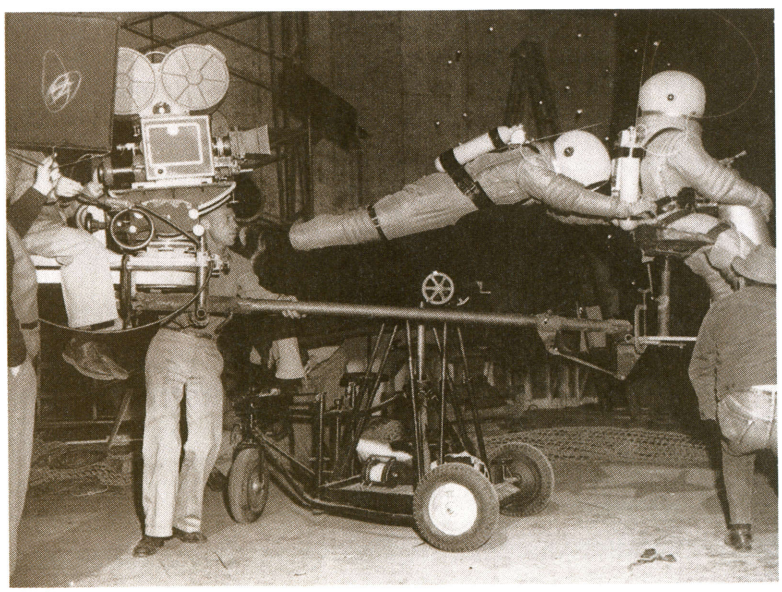


Right: Peering out from a bunker, General Thayer (Tom Powers) and Dr. Charles Cargraves (Warner Anderson) watch in dismay as the prototype of the *Luna* crashes. Below: Strapped to a special rig, a pair of stuntmen execute one of the film's gravitational gags.

wind of Pal's ambitious production, he cut financial corners on his picture in order to get it to the screen first.)

An important addition to the creative team for *Destination Moon* was matte artist Chesley Bonestell. An architect who had worked on portions of the Golden Gate Bridge, Bonestell had become a skilled creator of space imagery, doing background and special-effects paintings for movies and illustrations for science-fiction books and magazines. For Pal's production, Bonestell used plasticine, tissue paper, beaver board and other implements to create a miniature model of the moonscape on his dining-room table, which he then photographed and painted in different aspect ratios. He patterned the moonscape after the crater Harpalus, which faced Earth in the moon's northern latitude. Among the paintings Bonestell created for the film was a 13'-long panoramic view of the lunar scenery, which was mounted on wheels and rolled past a stationary camera.

"Probably no other living artist could have done these pictures," Pal said of Bonestell's work in a 1950 interview. "Mr. Bonestell is as mathematically conscientious as an astronomer or a physicist. He takes no artist's license and refuses to compromise with fact. His gifts, plus the art direction of Ernst Fegte, make the perfect team for this type of picture."



Fegté, who had been art director on *The Great Rupert*, and set decorator George Sawley had to experiment extensively with the technology of the day to create a realistic image of outer space for Pal's project. Fegte, who had begun his career at UFA Studios, Berlin, in 1919, had won an Academy Award in 1945 for *The Frenchman's Creek*. His specialty at the time was European settings. For *Destination Moon*, he and Sawley relied on forced perspective to create the illusion of distance in the cramped studio, placing cracks on the lunar surface in the foreground and smaller cracks stretching to the background. A special, curved stage was built to add realism to the forced-perspective photography.

In order to create a single light source as bright as the sun would be on the lunar surface, Lindon had the crew rig a huge bank of Brute arc lights. To create stars visible from the surface of the moon, 2,000 Oldsmobile headlights were hung on almost 70,000 feet of wire. These were visible predominantly from the lunar landscape and during the astronauts' forays outside their spaceship, *Luna*. To prevent excessive red halation, green gels were used to control the crimson hues.

Lindon found the control-room sequences the most arduous to film. The command post of the *Luna* was rigged with six removable panels on double gimbals that towered three stories high. Lindon had to shoot through a custom-made, gimbalized camera housing, which brought a smoothness and authenticity to depictions of weightlessness in the *Luna*'s control room.

Presenting a spaceship that

would be believable was another difficult task for Pal and his crew. Heinlein made a rough sketch of the *Luna*, which Bonestell painted in oils; after four revisions, the modelmakers came up with the final miniature seen in the picture. A full-sized model, measuring 150' tall, was erected in the Mojave Desert's Lucerne Valley. A full-sized gantry was trucked into the valley and assembled, while a miniature gantry was also created for the miniature craft. (Miniature floodlights on the gantry add to the realism of the take-off sequence.)

Rounding out the team of cinematic artisans was special-effects artist Lee Zavitz, who had begun his career auspiciously with uncredited work on the burning of Atlanta in *Gone with the Wind* (1939). Zavitz had contributed special effects to *Foreign Correspondent* (1940), *Captain Kidd* (1945) and *Diary of a Chambermaid* (1946). He rigged several gags for *Destination Moon*. One of them was to occur at the beginning of the film: the crash of a *Luna* prototype. The first take was ruined when Zavitz's Walkie-Talkie malfunctioned and the special-effects men controlling the crash and explosion were miscued. The expensive take was reshot the next day, after the crew reassembled the damaged rocket.

In order to simulate the G-forces astronauts would experience during takeoff, Zavitz designed couches that could be inflated and deflated to simulate a crushing force, and makeup artist Webster Phillips applied transparent membranes to the actors' faces that could be manipulated to simulate facial tension.

Excited by his project, Pal mounted an extensive publicity campaign for *Destination Moon* while it was still in production. Part of the campaign was a 1949 segment on *City at Night*, one of the earliest televised public-affairs shows. Co-hosts Keith Heatherington and Dorothy Gardiner visited General Service Studios to tour the set — which looks smaller in kinescope footage than in the finished film.

Left: Beneath the *Luna*'s tail, the astronauts prepare for their scientific experiments. Below: The film's cast and crew "on location" in the studio.

Film historian Bob Colman remembers tuning into the 1949 broadcast as a child. "*City at Night* never let you know in advance what their programming content was, and when I tuned in one evening, they were visiting General Service Studios, where they were shooting a major motion picture," Colman recalls. "This turned out to be *Destination Moon*, which was being profiled at the time in *Life* magazine. Heatherington gave a guided tour of the set, including the moon's surface, the rocketship and the rocketship's landing area, all within the confines of the soundstage. Although *Rocketship X-M* was released before *Destination Moon*... the PR campaign made us all aware that *Destination Moon* was the first film to seriously deal with the question of space travel."

Another visitor to the set was actor/film archivist Bob Burns, who would become a friend of Pal's. Burns says the father of one of his classmates was a grip on *Destination*

Lunar Ambition

Barnes (John Archer) attempts to repair the *Luna* in deep space.

Moon, and the boy invited Burns to visit the set with him. "When we walked on that stage, the set was refrigerated, and it was bitterly cold," Burns says. "The space suits were lined with Kapok, a material used in sleeping bags to keep one warm. The purpose of the Kapok was to make it look as if the suits were inflated with air. The actors were dying from the heat. . . and the crew was wearing winter coats."

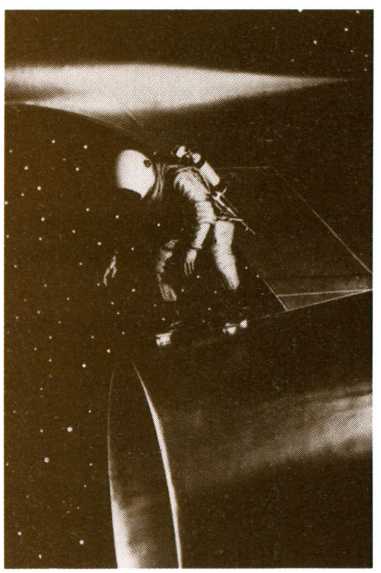
Burns says he read later that actor John Archer (playing Jim Barnes) had commented that being on the set was "like being in the middle of the Sahara Desert with a fur coat and a bucket over your head." Burns remembers Pichel saying again and again, "Let's try to get these shots quickly, so we can get these guys out of here."

According to Burns, seeing the set was overwhelming. "Brute spotlights were the biggest spotlights they made in those days, and they had arranged them to the point where you barely saw any cross-shadows. [The lighting battery] consisted of roughly a dozen of these arc spotlights. It was literally like walking onto the moon's surface, as one would imagine it in 1949."

Burns watched Pichel film a scene in which Archer descends the fuselage of the ship on an exterior ladder, while the other astronauts, carrying a telescopic camera, walk up a small hill toward the ship. "The guys carrying the telescope were midgets," Burns notes. "They used the midgets for false-perspective shots, while the lead actors were sitting in their chairs, still suited up. The midgets were also used for the weightless segments on the moon's surface."

Pal's promotional campaign for *Destination Moon* also included a live broadcast of Leigh Stevens's score on ABC Radio, which aired well ahead of the film's release (and was captured by Columbia Records on a rare, 25-minute disk), as well as a 30-minute radio treatment of the story, "Dimension X," written by Pal himself, which was broadcast on NBC in June of 1950. (The film was released in August.) There were also two comic-book versions of the story: a full-length comic book released by Strange Adventures, and an abbreviated version released by Fawcett Periodicals.

Zavitz earned an Academy Award for his special effects for *Destination Moon,* and went on to contribute effects to *Around the World in 80 Days* (1956), *On the Beach* (1959), *The Last Days of*



Sodom and Gomorrah (1962) and *The Pink Panther* (1963). Fegté and Sawley were nominated for the Academy Award for art direction/set decoration in the color category for their work on *Destination Moon*, but they lost to Cecil B. DeMille's *Samson and Delilah*. Lindon's cinematography was not nominated, but he went on to shoot more than 40 films, including *Around the World in 80 Days* (for which he won the Academy Award in 1956), *I Want to Live!* (for which he was nominated in 1958) and *The Manchurian Candidate* (1962). He also shot several television movies and series, among them *Alfred Hitchcock Presents* (1955) and, two years before he died, the Emmy Award-winning *Ritual of Evil* (1969).

Pichel directed five more films before his death in 1954, among them *Martin Luther* (1953) and *Day of Triumph* (1954). Pal went on to make classic contributions to the science-fiction and fantasy genres as a producer and director, including *When Worlds Collide* (1951) and *The War of the Worlds* (1953), which he produced, and *The Time Machine* (1960), *Atlantis, The Lost Continent* (1961) and *Seven Faces of Dr. Lao* (1964), which he produced and directed. He died in 1980 while filming *The Voyage of the Berg.* According to Burns, Pal was trying to get a sequel to *The Time Machine* off the ground at the time.

"George loved making movies, telling stories and convincing us that the unbelievable was believable," Burns says. "That was his craft, and that was his art." ■

Credits

George Pal Productions Inc. *presents* Destination Moon. *Color by* Technicolor. *Produced by* George Pal. *Directed by* Irving Pichel. *With* John Archer, Warner Anderson, Tom Powers, Dick Wesson, Erin O'Brien Moore. *Written for the screen by* Rip Van Ronkel, R. A. Heinlein, James O'Hanlon. *From the novel by* R. A. Heinlein. *Photography by* Lionel Lindon, ASC. *Production supervisor,* Martin Eisenberg. *Production designer,* Ernst Fegté. *Film editor,* Duke Goldstone. *Cartoon sequence by* Walter Lantz. *Technicolor color consultant,* Robert Brower. *Technical advisor, astronomical art,* Chesley Bonestell. *Assistant director,* Harold Godsoe. *Technical supervisor,* John S. Abbott. *Technicians,* Miles E. Pike, Dale Tholen. *Technical advisor,* R. A. Heinlein. *Special effects,* Lee Zavitz. *Makeup artist,* Webster Philips. *Set decoration,* George Sawley. *Orchestration,* David Torbet. *Sound,* William Lynch. *Music,* Leith Stevens.

Released in 1950 by Eagle Lion Films, rereleased in 1954 by United Artists, and reissued in 1956 by Budd Rogers.

Jim Barnes, John Archer. *Dr. Charles Cargraves,* Warner Anderson. *General Thayer,* Tom Powers. *Joe Sweeney,* Dick Wesson. *Emily Cargraves,* Erin O'Brien-Moore.

The author wishes to thank Bob Burns, Bob Colman, the Margaret Herrick library, Forrest J. Ackerman, and the late Robert Heinlein.

This article is dedicated to the memory of George and Jean Turner.

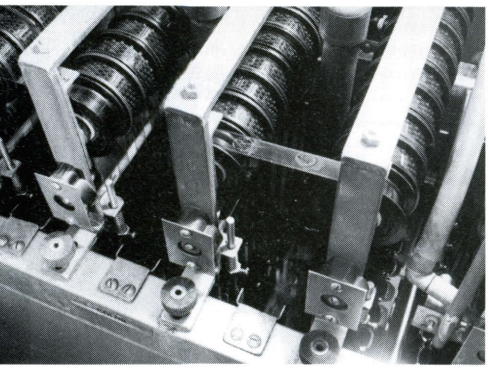
New Products & Services

compiled by Douglas Bankston

Sealant Salvages Season for NFL Films Lab

by Ed Cohen

Imagine a roll of celluloid stretched out the length of a football field, plus a couple of end zones. Now imagine a film 20 times that long. Now multiply *that* by 15. The result is a strip of film 400



football fields long — 120,000 feet, or nearly 23 miles of celluloid — which is close to the amount of film processed by NFL Films on any given weekend during football season (see *AC* Oct. '95).

Now imagine a glitch that imperils this entire film-developing process, jeopardizing the delivery of Sunday's action footage to fans throughout the world. It gives new meaning to the term "disaster film," doesn't it?

Well, that's what NFL Films pays Paul Delplace to worry about. As the company's laboratory engineer, Delplace is responsible for maintaining the film-processing equipment at the outfit's Mt. Laurel, N.J., laboratory, and ensuring that it's up and running when the tide of unprocessed film from 15 football games comes flooding in on Sunday afternoons during the season.

Delplace was elated when he recently discovered a product that would help him avert the dreaded specter of downtime while the world awaited the weekend's football highlights. The product, PLV 2100, manufactured by Pelseal Technologies, LLC, of Newtown, Pennsylvania, is the same liquid sealant that NASA uses on its space shuttles.

To process NFL film, the laboratory utilizes about 125 tanks. Color negative film, which accounts for most of the volume, is fed through a succession of 11 stainless-steel and titanium tanks — from pre-bath through developing, fixing, washing and stabilizing.

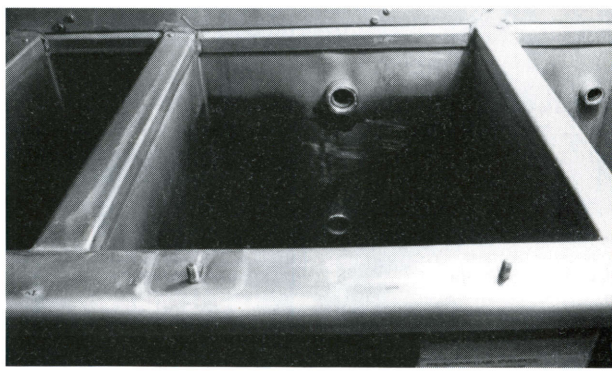
Although some of the processing chemicals are corrosive, a majority of them pose no threat to stainless steel. In principle, at least, says Delplace, "It's like filling your glass at home with water. It should stay there for thousands of years; it's not going to leak."

In 1999, however, the unthinkable happened. It was becoming evident that the fixer tank in the color-negative processing line, a vessel measuring 4' deep x 12" x 17", was leaking significantly. "I had no idea how big the problem was," recalls Delplace, "but it was bigger than normal. I suspected a weld let go or a seam might have opened up.

"After a lot of detective work, I finally concluded the leak was at the bottom of the tank. When I got down to one-and-a-half feet from the bottom, it was still leaking. I checked with as many lights as I could get into the tank, and crawled in as deep as I could go to check if I could see something, but it's almost impossible unless you have a crack that's real big. Yet liquid was running out of the tank like nobody's business. We lost three feet of chemical over one weekend.

"This particular machine is a son-of-a-gun in terms of removing the tank," he asserts. He explains that before the tank can be removed, the caps, assemblies and other structural components have to be removed; when everything is put back, it all has to be realigned. "It's a very big and time-consuming job," he notes. "It's like changing the spark plugs in your car by going through the trunk, cutting a hole in the firewall and working your way into the engine compartment. If I didn't have to take the tank out, I wasn't going to."

Delplace's first thought was to visit a marine-supply store and find an epoxy paint or coating used for protecting boats from salt water, but then he remembered Pelseal Technologies.



Above Left: Color negative film is run through a succession of 11 stainless steel and titanium tanks. Each Sunday during football season, approximately 120,000 feet of game footage is fed through 125 processing tanks at NFL Films' Mt. Laurel, New Jersey laboratory. Above: The leaking tank was stripped down, prepped and finally sealed with Pelseal's fluoroelastomer sealant.

Pelseal, located just across the Delaware River from NFL Films, specializes in the manufacture of products formulated from DuPont Dow Elastomers' Viton fluoroelastomer. Fluoroelastomer, a synthetic rubber, has been around for 40 years. For most of this time, it has been used primarily in molded or extruded products, such as O-rings and other rigid seals. Because of their ability to resist temperature extremes and corrosive liquids, fluoroelastomers are widely used in applications characterized by harsh environments, such as aircraft and automobile engines. Reasoning that such properties could be equally valuable in liquid products, Pelseal has focused on the marketing of fluoroelastomer adhesives, sealants and caulks. ➢

Delplace was already familiar with Pelseal's PLV 2040, an aerosol fluoroelastomer coating which NFL Films had used before to seal lightly pitted, steel surfaces. "I got in touch with [Pelseal president] Bill Ross, Jr., told him the situation and asked, 'What else have you got?'" remembers Delplace. "Ross suggested PLV 2100, which had a heavier viscosity than the aerosol spray. He sent over a couple of samples and told me how to use it."

Following Ross's instructions, Delplace emptied the remaining chemicals from the fixer tank, washed it thoroughly to remove all residue of the chemical, roughed up the tank bottom and 12" of the side walls with 180-grit sandpaper, and cleaned the surface with alcohol.

To reach and coat the almost inaccessible bottom and sides of the tank, Delplace improvised with an angled, 30" utility brush, which he found by chance at a home-improvement store. He added a 5" extension to the brush handle. The extra length and the angled end enabled him to apply coating to the previously unreachable bottom, sides and corners of the tank.

Ross suggested three coats be applied in adequate intervals to avert blistering. Delplace decided to take no chances. "I let it go [between coats] for days rather than hours, and I got no blistering at all," he reports.

The final coat was applied on a Friday morning. The following Monday, Delplace filled the tank to overflow level with fixer "and let it stay that way for several days. After three and a half days, the level of fixer was virtually unchanged [except for normal evaporation], and I knew the coating had done the trick.

"We put the two assemblies [the rollers through which the film is threaded] back in the tank," he concludes, "and we've been running the machine every single day since then with no leaks. If that hadn't worked, the next step would have been to take apart the entire machine. If we'd had to replace the tank, it would have cost in the neighborhood of $7,000 to $10,000, apart from labor and downtime. Had it happened during the season, we'd have lost several weeks of production, or it would have forced us into overtime expenses."

Within the next year, NFL Films expects to break ground for construction of a new, 200,000-square-foot facility on a nearby 26-acre site. In preparation for the move, which will quadruple the company's working area, NFL Films management plans to look at alternative equipment designs with the hope of preventing future leaks.

"I asked Bill Ross, 'What happens if we get another leak in the meantime?'" Delplace muses. "[He said], 'No problem. We have another product with a heavier viscosity.'"

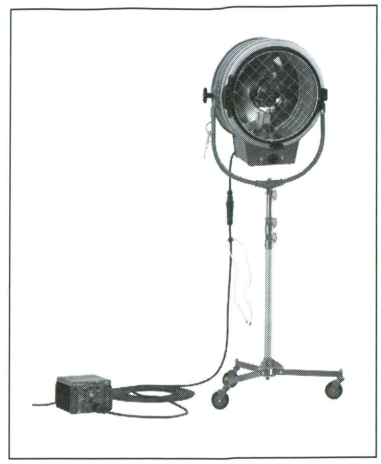
For more information, contact Bill Ross at Pelseal Technologies, LLC (215-497-1088).

Mole-Richardson Adds to Its Arsenal

Mole-Richardson has introduced the 2K, 6K and 12K Molequartz Spacelites to its extensive line of motion-picture lighting units. Each lantern light has an internal silk for full lantern effect. A black silk fitted over the internal silk can direct the light downward for a narrower pool of light. Globes are available in 3200°K or 2950°K clear or frost, and each set is equipped with a safety screen. The units can operate on

120/240V AC or DC. The lamp houses are constructed of rugged sheet aluminum and hung by an attached, chrome-plated, steel chain. Diffuser frames and silk targets are available for all three units.

The 2K Spacelite is 16 ½" in



diameter and weighs 19 lbs. with skirt, silk and target. The 6K Spacelite has a six-circuit socapex connector that can be powered and controlled with the existing socapex multi-circuit control system. Two-circuit 60 Amp Bates and three-circuit 20 Amp Bates adapters are available as well. The 6K is 27 ¾" in diameter and weighs 34 lbs. with skirt, silk and target. The 12K Spacelite can also be connected with a six-circuit socapex connector or with one-circuit 100 Amp Bates and two-circuit 60 Amp Bates adapters. It is 45" in diameter and weighs 56 lbs. with all the trimmings. Socapex cable substitutions are available for all units, in lengths ranging from 10' to 150'.

Also new to the lighting line are tungsten and HMI Molebeam Projector lamps. The 2K 18" and 5K 24" Molebeam Projectors are designed to produce a streaming ray of 3200°K tungsten light, such as a shaft of light through a window, to achieve sharp shadow effects. The 2K unit projects an 18" parallel beam of light, and the 5K unit projects a 24" parallel beam, both of which can be spotted and flooded from -5° to + 15°.

Both 120/240V AC/DC-operated units are constructed of light aluminum and are equipped with a safety screen covering flat, clear Pyrex safety glass. They can be used with the Mole-Richardson shutter and DMX shutter motor. Head weights for the 2K and 5K Molebeam Projectors are 47 and 79 lbs., respectively.

Mole-Richardson also has 1.2K 18" and 2.5K 24" HMI Molebeam

Projectors designed to produce a streaming ray of 5600°K daylight. For the HMI Projectors, an electronic square wave AC ballast or a magnetic ballast can be used. Both are equipped with safety screens. The 1.2K 18" and 2.5K 24" HMI Molebeam Projector head weights are 48 and 81 lbs., respectively.

For more information, contact Mole-Richardson at (323) 851-0111 (phone) or (323) 851-5593 (fax), or e-mail the company at: info@mole.com. The company's Web site is www.mole.com.

Kodak Premieres New Color Reversal Film

Kodak has introduced the Ektachrome 100D 5285 Color Reversal 35mm film, which is available in 400- and 1,000-foot rolls. The new film is designed to provide cinematographers with another tool for creating unusual and vibrant looks, generating saturated color with exceptional sharpness while maintaining accurate neutrals and flesh tones.

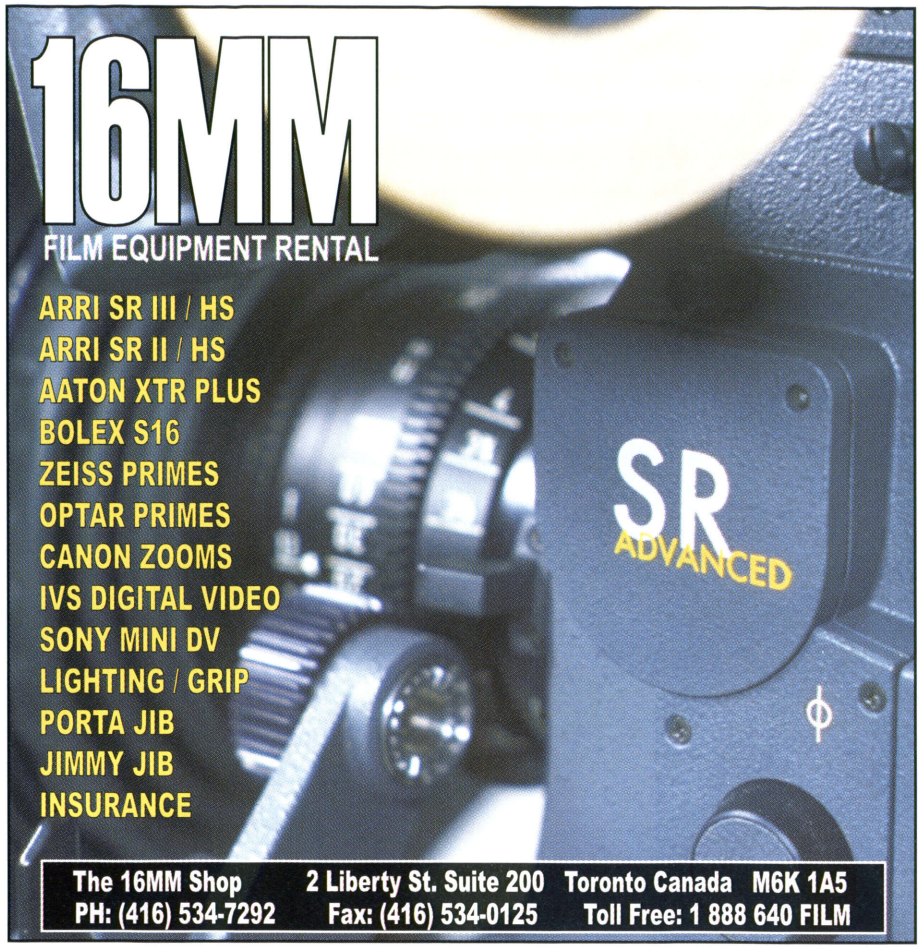
The Ektachrome stock is optimized for an exposure index of 100 in daylight or 25 in tungsten light with a Wratten No. 80A color-correction filter. The stock can be developed using standard Kodak E-6 processing, cross-processing, or other custom lab processes.

"Ektachrome 100D film delivers incredible, super-saturated color right out of the camera," says Joseph Nardone, marketing manager of Kodak's Professional Motion Imaging Division. "Cinematographers who have tested it so far are loving it for the high-contrast, 'gutsy' look they're getting."

For more information, contact your local Kodak representative or visit the company's Web site at www.kodak.com/go/motion.

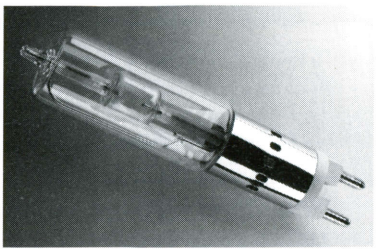
Sylvania Introduces New Lamps

OSRAM Sylvania has introduced the Studioline 55W fluorescent lamp, which casts more light, consumes less power and generates less heat than other models. Available in 3200°K and 5600°K color temperatures, the lamp has



full dimming capability and excellent color stability during the full range of dimming, with a luminous flux of 3800 lumens. The Studioline 55W has an 8,000-hour life and operates on standard ballast or electronic power supplies.

The company has also released the OSRAM HMI 6000W/SE, which provides the right balance of color temperature (6000°K) and high color



rendition (CRI >90) throughout the 500-hour life of the lamp. A specially designed base configuration ensures reliable hot restrikes over the lamp's lifetime.

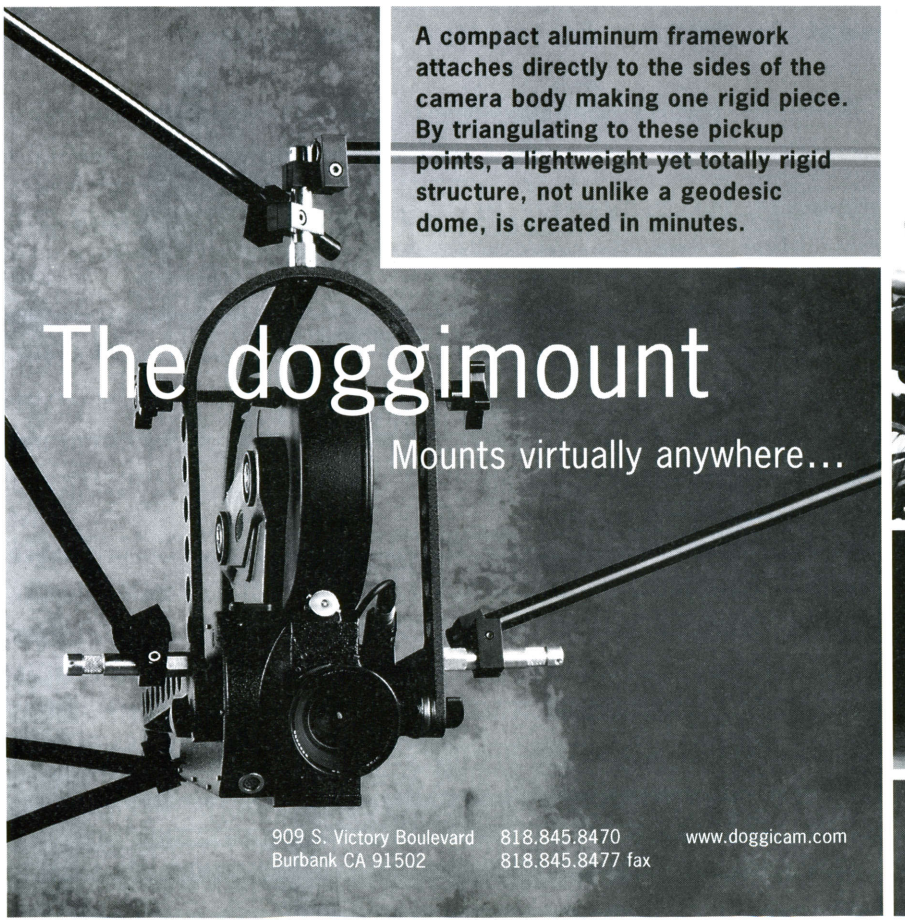
For more information, contact OSRAM Sylvania, a division of OSRAM Photo-Optic, at (888) 677-2627 (phone), (800) 762-7192 (fax), or through its Web site: www.sylvania.com.

Soft Sources with a Powerful Punch

The French company Softlights presents its new, powerful fluorescent-lighting units: the T5-200, T5-150 and the T5-55 Mini Monster.

Each unit comes with small, 16mm Softlight-developed T5 fluorescent tubes in 3200°K and 5500°K temperatures that have perfectly balanced spectral energy distribution free from the traditional green sheen that usually accompanies fluorescent lighting. The lighting units incorporate high-frequency, flicker-free ballasts and DMX digitally controlled dimming that conserves energy and increases light output. The light can be dimmed directly on the lamp, or from a DMX 512 source that provides a dimming range of five T stops.

The units can be mounted using a yoke or on a stand using the female baby plate that accepts all mounting with a 5/8 pin. The slim, uniquely designed lights make it possible to assemble two or three units together to make one large, soft source. A master/slave functionality is also provided so units can be dimmed



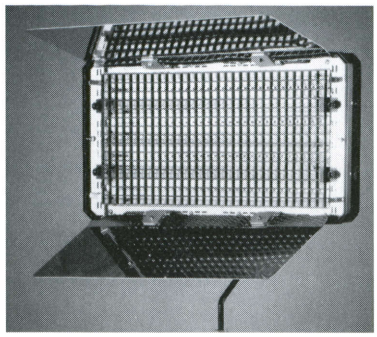
either all together or individually.

Each unit can run on 110V, 240V or battery power. The 230mm x 890mm x 57mm T5-200 is an 8-bank of 85cm T5 tubes. The T5-150 is a 4-bank of 145cm T5 tubes. A variety of accessories is available, including black or silver egg crates; a custom egg crate for the triple T5-200; flight cases; yokes for single, double and triple mounting; and DMX lighting desks. The 135mm x 590mm x 55mm 4-bank T5-55 Mini Monster has an optional, external, battery-driven DMX lighting-control unit.

For more information, contact Softlights at 33(0) 14845-1862 (phone), 33(0) 14845-1844 (fax), or through its Web site: www.softlights.com.

Fluorescent on the Go

Lowel-Light, in collaboration with Fluo-Tec, has designed and released self-contained, compact, fluorescent Caselites. The Caselite combines a fluorescent light with a rugged carrying case



and features room for spare bulbs, the tilt bracket and plate for mounting on stands, and a power cord. The light has an internal ballast, separate lamp-switching capability, a snap-on egg crate, mounted gel clips and dual-purpose barn-door/intensifiers. Everything is contained in the case.

Two models are available: the Caselite 2 with two 55W fluorescent tubes and the Caselite 4 with four 55W tubes. Both are capable of 120/230V operation and can use daylight or tungsten-corrected T-55 compact tubes. Individual lamp switches make dimming unnecessary. The lightweight yet rugged exterior case is made of heavy-duty ABS plastic. A rain cover is also included.

The 7.73"-high, 23.86"-wide, 3.54"-deep Caselite 2 (with its case and accessories) weighs 9.75 lbs. The 12.83" x 23.86" x 3.54" Caselite 4 weighs 13.70 lbs.

For more information, contact Lowel-Light Manufacturing, Inc., at (718) 921-0600 (phone), (718) 921-0303 (fax) or via e-mail: info@lowel.com.

Doctors Are In

Doctor Optics in Arizona has released a high-performance line of optics for stage, studio and theater lighting. The line of blank-molded or ground-and-polished "standard" precision optical components includes aspheric condenser and spherical singlet lenses; concave first surface mirrors and heat-absorbing mirrors consisting of Schott B270 superwite, F2 high-refractive index,

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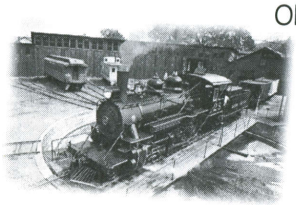

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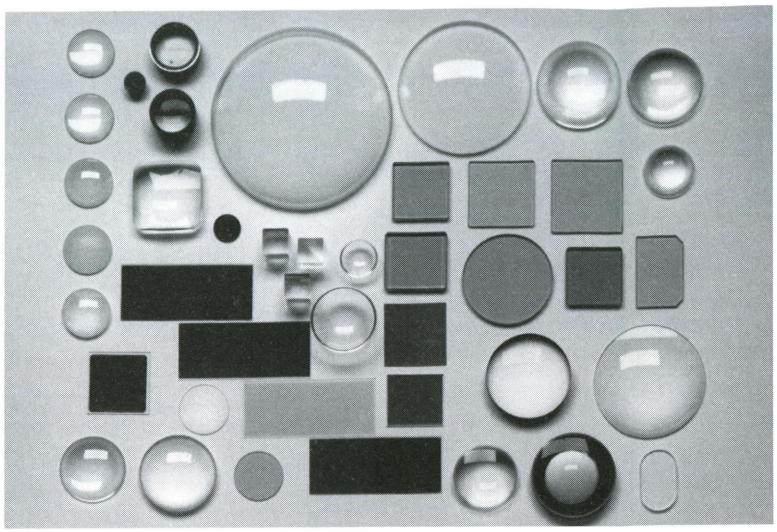


Duran borosilicate and other types of borosilicate glass material; as well as single- or multi-layer AR, cold light, dichroic, heat-protective, infrared, metallic and UV-coated lenses.

Doctor Optics also offers custom-designed, single and multi-element lens assemblies with fixed or variable focal lengths in metal housings. These include aspheric, ellipsoidal and multi-faceted and prismatic reflectors.

For more information, contact Doctor Optics at (480) 844-7585 (phone), (480) 844-7826 (fax), or via e-mail at dopticsinc@aol.com. The company's Web site is www.docteroptics.com.

Measuring the Light

New from Minolta is the T-10 Illuminance System that features an expandable and economical modular design using compact and lightweight interchangeable components. The multi-purpose design makes this meter suitable for applications such as research and development in lighting manufacturing, inspection of light sources in the field, and maintenance of optimum illumination levels in various facilities.

Measurement output is selectable for analog or digital form. The System features a standard RS232C interface, enabling a connection to a computer. The basic T-10 System consists of the portable T-10 Meter with a standard receptor useful for a wide range of lighting conditions. Up to 30 receptor heads can be connected to a single meter unit for multipoint measurements.

Optional receptors include a T-10M receptor for small area measurement and the T-10W and T-10W1 waterproof receptors designed for underwater measuring. These receptors also provide accurate measurement of outdoor lighting under wet conditions.

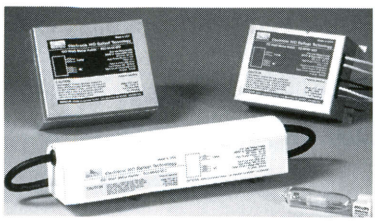
A variety of measurement operations are selectable by the user including illuminance, illuminance difference, integrated illuminance, and setting of reference and color compensation values.

The Minolta data management software is also available that provides visual data display and flexible data processing capabilities including, for example, a variety of multipoint graphics in grid, trend graph and sensor position output formats. Software-controlled automatic measurement also can be performed at user-selected intervals. Tolerances can be automatically set, and data can be saved, printed or transferred to other applications such as Excel spreadsheets.

Minolta Corporation, Instrument Systems Division, (888) ISD-Color, fax (201) 529-6079, Web site: www.minolta-lightmeters.com.

New Electronic Ballasts

California-based INnova has introduced a family of dimmable electronic High Intensity Discharge ballasts for metal halide and CDM lamps ranging from 35-150 watts. The compact, cool-running HID lamp controller with hardened EMI/RFI input section has excellent constant lamp wattage control against AC line fluctuation as well as lamp variations and aging. The low frequency, soft edge square wave lamp drive eliminates



lamp flicker and acoustic resonance in addition to extending lamp life. The ballasts automatically recognize the end of lamp life and shuts down. Continuous dimming is performed automatically or by the user.

INnova, (714) 236-1136, fax (714) 236-1156.

Lighting Options from Broncolor

Swiss-based Broncolor and its exclusive U.S. distributor, Sinar Bron Imaging, has released several new lighting products.

The new 20"-diameter Balloon Lamp diffuser is constructed of Plexiglas and disperses light similar to that of a street lamp, evenly illuminating a 360° area. The lightweight Balloon creates highlights that are round and slightly burned out, making it ideal for interior shooting.

Also released is the Pillar Stand 215 to replace the Mini-Hazylight stand. The height adjustment mechanism has been upgraded with a crank gear. The solid steel stand measures 7'2" tall on a platform with caster wheels with brakes that can accommodate a power pack.

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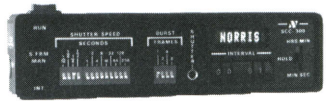
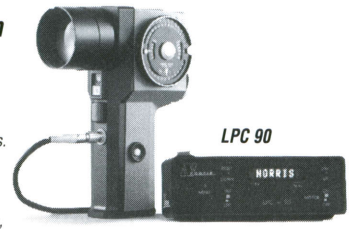


SCC 300 Standard Crystal Controller

Single Frame System

The Norris Single Frame System consists of two basic modules, the camera drive motor and crystal controller with shutter speed, interval and burst features. All exposures and timing is generated from a crystal source. This insures accuracy and repeatability. For cameras 16mm, 35 mm, 65mm and Imax. Battery operation in the field and AC/DC converter in the studio.



LPC 90

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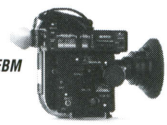

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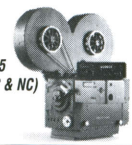

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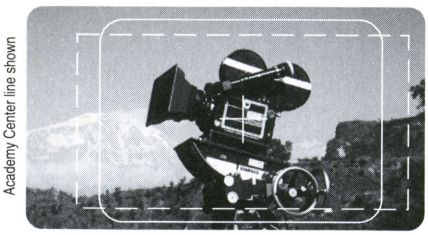

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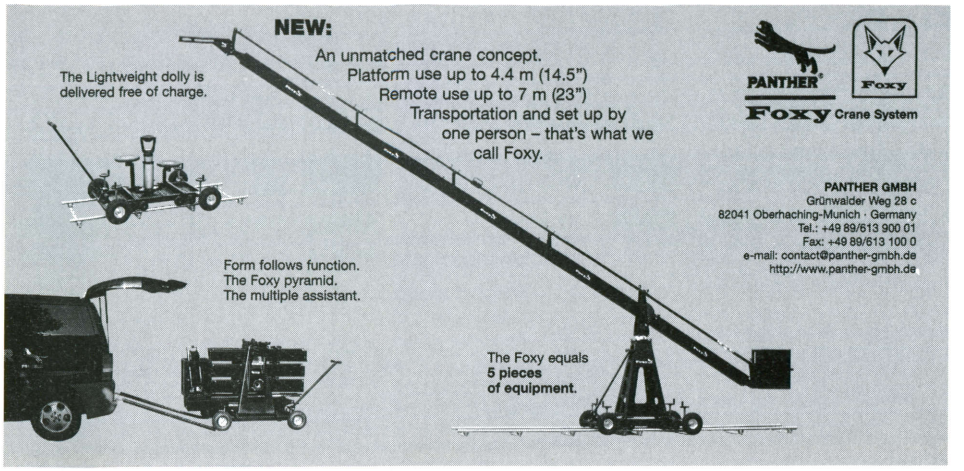

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Points East

New Millennium Studios Does It All

by Eric Rudolph

The bold spirit of Oscar Micheaux, one of America's earliest independent cinema pioneers, is being evoked by the founders of Virginia-based New Millennium Studios, which has produced and plans to self-distribute feature films aimed at a broad black middle-class audience.

At the age of 24, Oscar Micheaux (1884-1951), who worked as a coal miner, stockyard worker and Pullman porter before becoming one of America's first black homesteaders, began writing novels based on his experiences. He subsequently sold his stories successfully door-to-door. When a black film company expressed interest in adapting his novel *The Homesteader*, Micheaux wanted to direct the film, but was spurned. Determined to prevail, he raised money from fellow farmers in North Dakota, and produced the silent film on his own.

After *The Homesteader* was completed in 1919, Micheaux carried the print personally to the nation's black-owned movie theaters, and the members of this circuit embraced both the movie and Micheaux. While meeting with the theater owners, he outlined his next film convincingly enough to be paid advances on future rentals, a pattern of independent pre-sale financing that he would continue throughout his career. Micheaux eventually produced close to 50 independent features into the late 1940s, successfully making the transition from silents to talkies against tremendous odds.

Micheaux is a major hero and inspiration for actor/director Tim Reid (*Once Upon a Time. . . When We Were Colored*), who is also well-known for his role as the ultra-hip late-night disk jockey Venus Flytrap on the old sitcom *WKRP in Cincinnati*. Reid and his wife, Daphne Maxwell-Reid, are the principal owners of New Millennium Studios, a 60-acre, full-service production facility near Richmond, Virginia that houses a 15,000-square-foot soundstage, as well as extensive backlot sets and pre- and postproduction facilities. (Reid's partners in New Millennium, in addition to his wife, include Nextel co-founder Mark Warner and local real-estate developer Dan Hoffler.)

"We saw that distribution wasn't such a difficult thing to do. There are a lot of screens out there that need product. With the right strategy and timing, you can get good screens in the right markets and make money."

— Martin Jones,
Obsidian Productions

Obsidian Productions, New Millennium's film production arm, will put together feature films aimed at young and older middle-class black audiences. Unattractive distribution offers have convinced Reid and Obsidian manager Martin Jones that they must also distribute the films themselves, thereby maintaining ownership of the negatives — just as Micheaux so boldly did.

Obsidian's first completed production is *Asunder*, a romantic thriller directed by Reid. Jones notes that *Asunder's* co-executive producer and star, Blair Underwood (*Set It Off, Gattaca, Deep Impact*) wryly describes the film as "*Fatal Attraction* meets *Waiting to Exhale*." According to Jones, Blair's quote indicates his belief that "*Asunder* appeals to the same black and white demographics that loved both of those successful films."

When *Asunder* screened at the recent Chicago Film Festival, *Variety* predicted it would likely earn "healthy returns on hand-picked screens." Jones points out that *Asunder* cost just under $2 million, most of which was raised through foreign pre-sales — despite the industry's prevailing belief that solid foreign pre-sales aren't possible with a black-oriented film.

Obsidian has also wrapped production on its second feature, the romantic comedy *About Last Summer*, and is gearing up for self-distribution of both films later this year. Jones offers, "On *Once Upon a Time. . . When We Were Colored*, we had to get involved in the distribution, and it was like the scene in *The Wizard of Oz* when they pull the curtain back. We saw that distribution wasn't such a difficult thing to do. There are a lot of screens out there that need product. With the right strategy and timing, you can get good screens in the right markets and make money."

That prospect stands in dramatic contrast to the deals Obsidian was offered for *Asunder* by the major and mini-major studios, which Jones

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describes as "insulting." He maintains that "the studio deals would have made it next to impossible to make a profit," while also requiring Obsidian to relinquish ownership of the negative.

Asunder was made almost entirely with local Virginia technical talent, with the exception of cinematographer John Simmons (*3 Strikes, Sistuhs*) and his gaffer and key grip. The film was based from start to finish at New Millennium, and was even processed locally at Richmond's Commonwealth Laboratory, which primarily does work for cable television networks. "In the past few years, we've sent a million feet of film through Commonwealth, with wonderful results," Jones testifies.

The New Millennium studio facility landed in Petersburg, Virginia, a suburb of Richmond. Government officials aggressively pursued the project after learning that Reid, an area native, was looking to build a facility in his home state. "The local and state governments, via an industrial opportunity fund, bought the land and gave it to us with the provision that we would build a working studio," Jones says, explaining that the project involved about $4 million in construction costs. He adds that the gamble paid off: during its first eight months of operation, the facility generated over $15 million for the local economy.

Since opening its doors, New Millennium has been constantly busy. Jones details, "We started right away with a Chevrolet ad campaign, then we shot *Asunder,* and then Tim created [the popular Showtime comedy series] *Linc's*." (The show, which shot its first season at New Millennium, was moved to Paramount Pictures in Hollywood after Viacom bought *Linc's* from its Showtime subsidiary.) In addition, some 30 commercials have been shot at New Millennium in its 2 ½ years of existence.

Other feature and television projects that have been filmed in whole or part at New Millennium include the ABC miniseries *Tom Clancy's Net Force*, TNT's *The Day Lincoln was Shot* and the upcoming Jeff Bridges/Joan Allen film *The Contender*, a $10 million movie about a woman who becomes the first female vice president of the United States.

Interestingly, New Millennium has one of three Oval Office sets in North America, plus a 75 percent scale exterior of the White House that was built for TNT's Lincoln film. The studio's three-block exterior urban backlot set, as well as the ability of nearby Richmond to stand in for key parts of Washington D.C. (as it did in such features as *The Jackal, G.I. Jane* and *The Shadow Conspiracy*) also help bring in productions. "Producers plan to come here for three days to use our Oval Office set, and then move on to D.C. for a month," Jones attests. "However, the reverse also happens; they'll shoot with us for a month, doing D.C. exteriors on our backlot and in Richmond. Then they'll go to D.C. for a couple of days to do second-unit shots, mostly of the monuments. That happened on *Net Force* and some other productions."

Reid, Jones and their associates feel that their plans to produce, distribute and maintain ownership of black mainstream features will prove to be good business based on rock-solid demographics. "*People* magazine recently confirmed what's been known for years: that one out of every four movie tickets in America is sold to a black consumer," Jones says. "However, of the approximately 400 features released in 1999, only six were black movies — meaning that they had stories focused on black lives, with black stars and the significant presence of blacks on the creative end. On *Asunder*, the stars, the producers, the writer and the director are all African-Americans. But despite the fact that black people represent 25 percent of the total movie audience, I can't get the studios to take *Asunder* to market under reasonable terms, so I have no choice but to go into distribution. Self-distribution, of course, means that we own the negatives, which is just fine with us." ■

Books in Review

by Ray Zone

Seventy Light Years:
A Life in the Movies
by Freddie Young
as told to Peter Busby
Faber and Faber
164 pages (hardcover) $27.00
ISBN 0-571-19793-0

You'd have to go back to Virgil E. Miller's 1964 autobiography, *Splinters From Hollywood Tripods,* to find a wealth of cinema history and lore comparable to the feast offered in this new book by the late Freddie Young, BSC. Young didn't live to see the publication of his engaging memoir, but we are extremely fortunate that he has left us this valuable record of his work.

Freddie Young began his career in the movies in 1917 at the age of 15 at the Gaumont Studios in Shepherd's Bush, London. His first job was in the laboratory. "For a cameraman," he writes, "there is no better experience than to have worked in a lab. If the cameraman has himself had lab experience, he's in a position to pinpoint any problem, and he can talk to the laboratory on equal terms."

After two years in the lab, Young moved up to assistant cameraman. He learned that "the assistant cameraman... did all the jobs nobody else felt like doing." At that time, those jobs included still set photography, film editing, projection and negative cutting.

The intrepid Young even served as a stuntman on several films in the 1920s. Between feature films, Young produced newsreels for Gaumont Pictorials. "I did these jobs completely on my own," he recalls. "One had the same independence and flexibility as a reporter with a notebook." For this work, he used a Debrie camera as well as the small spring-wound Eyemo, which proved "handy in confined spaces."

Young got his break as the director of photography for director M.A. Wetherell on "a big battle picture" titled *Victory* in 1927. "Sets and lighting at this time were primitive," he notes. "There was no attempt at artistry. You couldn't really call it lighting. It was just illumination." Only two kinds of arc lamps were available at the time: the Winchester and the French-made Lebarden. Within these limitations, however, Young would create lighting "to make things look as they would in real life."

After producing montages for *Blackmail* and *White Cargo*, the first two sound films made in Great Britain, and after filming many features, Young became MGM's top cameraman in Britain. Director Herbert Wilcox later brought Young to Hollywood as director of photography on the 1939 RKO film *Nurse Edith Cavell*. On the first day of shooting, Young found that the gaffer had pre-lit the entire set. "Never let a gaffer light your set," Young advises, "because then you're a dead duck."

This autobiography is organized in separate chapters dedicated to actors, directors and the different films that the cinematographer has photographed. Young is probably best known for his work with David Lean on *Lawrence of Arabia*, *Doctor Zhivago* and *Ryan's Daughter*. These films earned the cinematographer three Academy Awards, and the book offers some great stories about the making of these epic pictures.

Young's observations on filmmaking are pithy and aphoristic. On directors: "Directors welcome suggestions, so long as they're able to believe they thought of them themselves." On filmmaking: "Completing a film at all, let alone on

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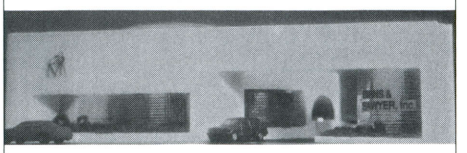

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by Peter Ettedgui

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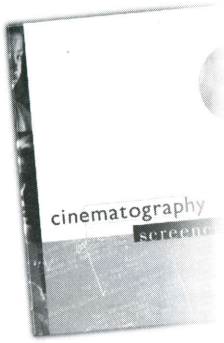

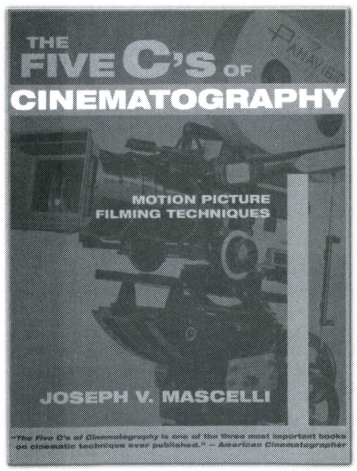

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Seventy Light Years is an automatic classic in the literature of cinematography. It includes a filmography and many great photos that show the legendary Young at work.

Film Presentation for the 21st Century: 70mm Super-Definition Cinema

Various Contributors
Publisher: Johan C.M. Wolthius
62 pps, Softcover $11.50
ISBN: 90-803503-2-X

This book, originally presented in April of 1999 at the Todd-AO Studios in Hollywood and accompanied by a screening of scenes from original 70mm films such as *Oklahoma* and *Baraka*, is a loving tribute to large-format film and the beauties of 70mm. The different contributors, many of whom are motion picture professionals, are knowledgeable champions of large-format cinema.

One of the ironies of present-day exhibition is the "tyranny of digital sound systems," via which, as Paul H. Rayton states in his introduction, the movie industry is "devoting almost 100 percent of its attention to sound." The only recent Hollywood release shown in 70mm was *Titanic*, which was blown up from 35mm originals.

70mm dates back to the earliest days of cinema. In 1897, Biograph film stock was 68mm (with no sprocket holes). The Lumière brothers produced 75mm film for the 1900 Paris Exposition. In 1929, Fox introduced *Grandeur News* with a 4-perf 70mm film, using an optical soundtrack and an aspect ratio of 2.13:1. The era of modern 5-perf 70mm films shot on 65mm negative began in 1955 with *Oklahoma*. Initially, only four theaters in America were equipped to show 70mm, but by the 1990s, more than 900 theaters were capable of screening large formats.

After 1970, the 65/70mm technology began to die out as a result of the new "blow-up" process, which allowed the creation of 70mm prints struck from 35mm negatives. Today, this technique is used for European releases of big-budget action films such as *Tomorrow Never Dies* and *Armageddon,* but American audiences are generally denied this pleasure. However, the 70mm 15-perf horizontal Imax film is alive and well, in both 2-D and 3-D, at special venues.

In the early 1990s, several original 65/70mm films, including *Lawrence of Arabia* and *Spartacus,* were restored and exhibited. Freddie Young, BSC is the cinematographer most associated with 70mm, since he photographed *Solomon and Sheba, Lawrence of Arabia, Lord Jim, Dr. Zhivago, Ryan's Daughter, Nicholas and Alexandra,* and *The Battle of Britain* in the large format.

A significant reason 70mm looks better onscreen is that the large film (which is 3 ½ times the size of 35mm) allows the energy of the projector lamphouse to spread out, reducing the risk of heat damage to the film. This minimizes "focus flutter" as the film reacts to the heat, producing a much sharper and more stable image. In addition, the longer focal length of the large-format projection lenses provides greater depth of focus with increased image steadiness. With the lamphouse energy spread out, higher levels of light can be obtained to meet the minimum SMPTE standard of 16 footlamberts onscreen.

One particularly interesting passage in this book is a memo from Robert A. Harris to David Lean, in which the former provides exploratory information comparing 35mm and 65mm origination costs (65mm costs 2.4 times as much as 35mm). Also included is a filmography of original 65/70mm films and a fold-out poster detailing the "Cinema of the Future," which boasts five large-format theaters, a motion-simulator ride, video screening rooms, a theater and stage for live performances, and a disco with video screens. ■

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EADWARD MUYBRIDGE

by Ray Zone & Chuck Roblin

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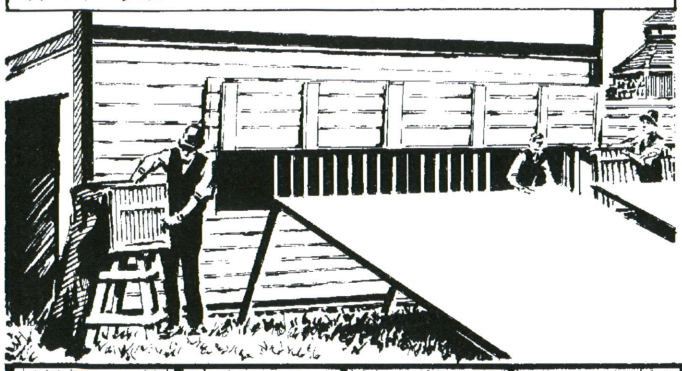

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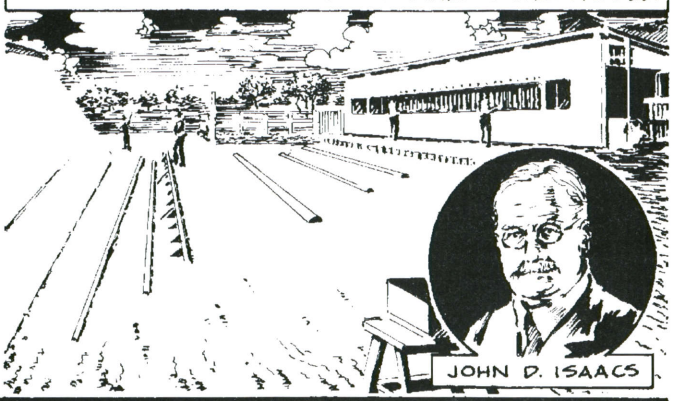

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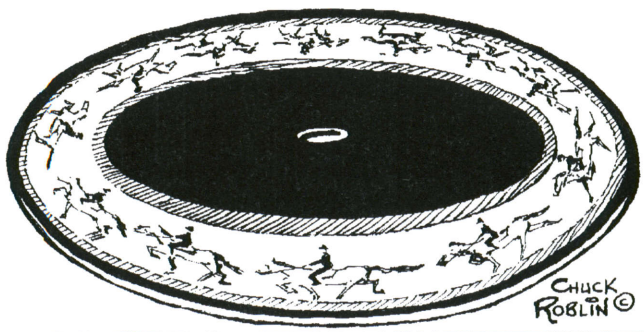

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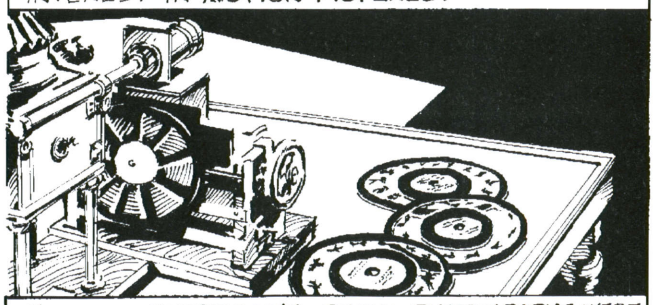

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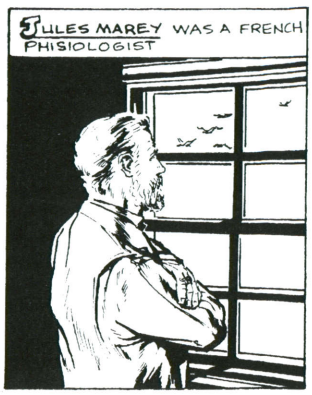

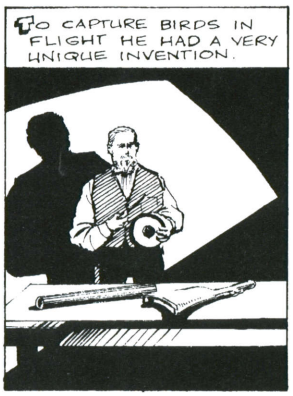

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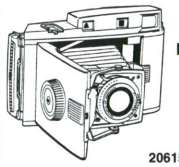

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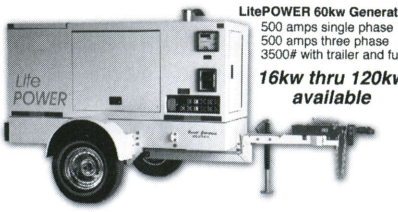

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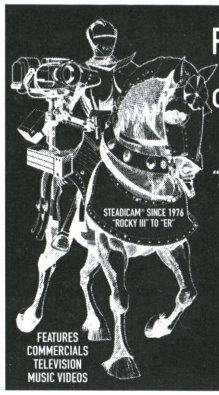

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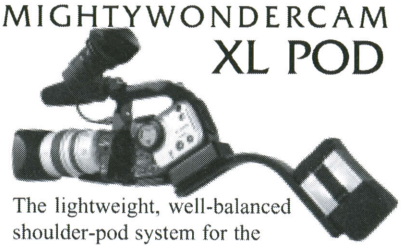
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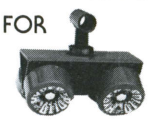
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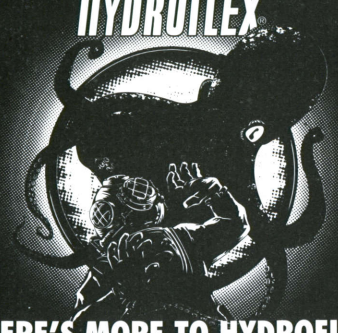
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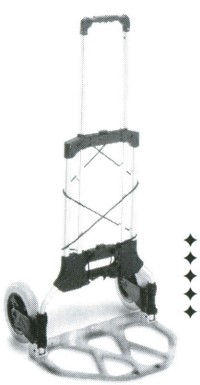
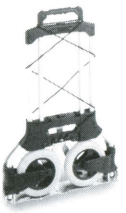
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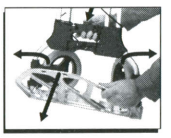
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From the Clubhouse

The Society's membership has grown again, with six new members inducted into its active ranks: Alan Caso, Richard Crudo, Peter Levy, Newton Thomas Sigel, Dennis Smith and Peter Stein.

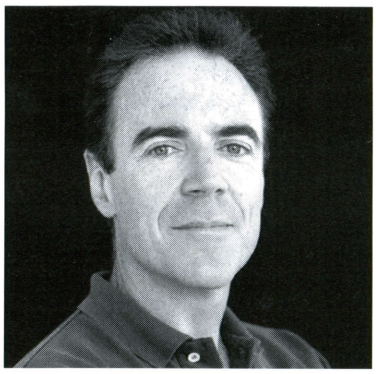
Alan Caso was one of the industry's leading Steadicam operators (*Romancing the Stone, The Hunt for Red October*) before advancing to director of photography status. Since that time, he has worked extensively in the television field on such telefilms as *Tonya and Nancy*, *Good Old Boys* and *Bed of Lies;* he has also filmed episodes of the TV series *Tour of Duty,* as well as 20 episodes of *Raven*. His feature film resumé includes *Ed* and the children's hits *Elmo in Grouchland* and *Muppets from Space*.

His photography for the 1997 TNT television movie *George Wallace*, directed by John Frankenheimer, earned Caso an ASC Award for outstanding cinematography (see *AC* May '98) and an Emmy nomination. Caso shot the film, which recounts the life of the controversial Alabama governor, in both black-and-white and color, blending this footage with archival material culled from a variety of sources.

Caso, who first worked with Frankenheimer as an operator on *52 Pickup* in 1986, reteamed with the director on the feature *Reindeer Games*, which is slated to be released later in 2000.

Brooklyn-born **Richard Crudo** knew a filmmaking career was in his future after his father took him to see *The Godfather* at the age of 14. After graduating from St. John's University with a film degree, he toiled as a camera assistant on micro-budgeted projects while working toward his master's degree in filmmaking at Columbia University. He eventually received his graduate degree and acquired enough experience to join the New York Camera Guild. While working his way up through the ranks, he learned from such noted Society cinematographers as Gordon Willis, Michael Chapman, Vittorio Storaro and others.

Crudo has photographed the black-and-white drama *Federal Hill* (*AC* May '95), the film adaptation of David



Mamet's play *American Buffalo* (AC Feb. '96) and the recent teen comedy *American Pie*, which certainly altered viewers' perceptions of the old-fashioned, home-made dessert.

Peter Levy has gained considerable experience on effects-laden productions. During his career, he has photographed such films as *A Nightmare on Elm Street: The Dream Child, Predator 2, Judgment Night, Cutthroat Island, Broken Arrow* and *Lost in Space* (see *AC* April '98).

Levy, also a member of the Australian Cinematographers Society, spent nearly 10 months working on director Stephen Hopkins' visual effects-heavy *Lost in Space,* and physically worked on the film's photography for 120 of those days. Many of the film's sets required a number of different, contrasting looks, ranging from stylized theatricality to film noir to extreme overexposure.

Voted the 1990 Australian Cinematographer of the Year, Levy collaborated with Hopkins again on *The Third Degree*, which will be released later this year.

Newton Thomas Sigel has photographed a wide range of projects, including music videos, documentaries, television series, MOWs and feature films. He has lent his visual expertise to music videos for the Talking Heads (including the classic clip for "Burning Down the House") and k.d. lang, among other artists.

Sigel is also a noted documentarian, having filmed the Academy Award-winning *Witness to War* (which he co-directed with Deborah Shaffer), the Oscar-nominated *El Salvador,* and *Another Vietnam*. He has also photographed numerous television movies and series, including *Roe vs. Wade* and the pilots for both *The Wonder Years* and Stephen Bochco's *Cop Rock*.

In the feature realm, Sigel has shot several suspense-filled pictures, including *The Usual Suspects, The Trigger Effect, Blood and Wine* and *Apt Pupil*. His most recent big-screen effort, the Gulf War adventure *Three Kings*, employed a visually striking, high-contrast, burned-out look to enhance the film's desert landscapes. To achieve the unusual visual style, the cinematographer used color reversal film stock that was cross-processed at the lab (see *AC* Nov. '99). Sigel's work can next be seen in the upcoming 2000 release *X-Men*.

Dennis Smith began as a photojournalist for ABC in 1971 after receiving valuable training from his father, a well-

Continued on page 135

In Memoriam

Manuel J. Berenguer, ASC, one of the most prolific Spanish cinematographers, passed away December 20, 1999, in Spain at the age of 86. Berenguer had photographed over 100 feature films during his career and won Spain's Oscar-equivalent award for cinematography seven times.

Born April 25, 1913 in Alicante, Spain, Berenguer began his cinematography career as a Spanish correspondent for Fox Movietone News in 1939. In 1940, he joined the camera crew for *The 13,000*, and during the three-month production of that feature, rose all the way to the rank of director of photography. He initially served as the focus-puller but stepped into the operator role when the original operator became ill. The outbreak of World War II caused the film's French cinematographer to leave, and Berenguer was appointed as his replacement. From then on, Berenguer was a director of photography.

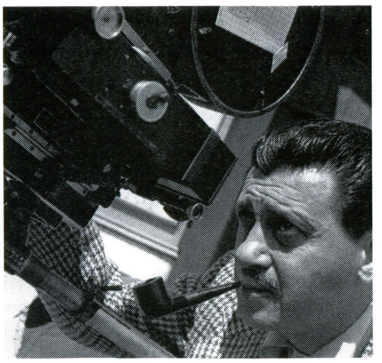
In 1958, he was the recipient of the first Spanish National Prize for Cinematography awarded by the Spanish government for his black-and-white photography in *...Y Eligio El Infierno*. He also won the Golden Bear Award at the Berlin Film Festival in 1960 for his work in *El Lazarillo de Tormes*.

Berenguer shared director of photography credit with ASC members Franz Planer and Milton Krasner on the Samuel Bronston film *King of Kings*, directed by Nicholas Ray in 1960. Also in 1960, Berenguer and Planer were awarded the Lady of Barcelona, prize at the International Color Competition for Cinematographers in Barcelona for their Planer-Berenguer Polyfocal Lens System used in *King of Kings*, the system could achieve a sharp depth of focus from 50 centimeters to infinity even when the lens iris was wide open.

In addition to numerous Spanish feature films, Berenguer photographed *Thunderstorm* (1956), director Andrew Marton's *The Thin Red Line* (1964), *Simón Bolívar* (1968), *Murders in the Rue Morgue* (1971) and *The Black Pearl* (1977). He also provided second-unit cinematography for Bronston's *El Cid* (1961), directed by Anthony Mann, and MGM's *Doctor Zhivago* (1965), directed by David Lean.

Berenguer became a member of the Society in 1961 upon the recommendations of fellows Franz Planer and Milton Krasner. He was the recipient of the ASC gold card, celebrating 25 years as an active member of the Society.

He is survived by his wife, Mercedes, and sons Andrés Berenguer, ASC, AEC and Manuel Berenguer. ■



Maury Gertsman, ASC, whose films in the 1940s, '50s and '60s typified the western/war/thriller subject matter of those decades, passed away December 13, 1999 at the age of 92.

Born May 17, 1907 in Philadelphia, Pennsylvania, Gertsman worked with many legendary cameramen as he steadily rose through the ranks. As an assistant for nine years, he served under such exceptional Society fellows as Andre Barlatier, Merritt Gerstad, Leonard Smith, Norbert Brodine and Gregg Toland. In 1934, he moved up to second unit cinematographer on Universal's *The Practical Joke*.

By the 1940s, Gertsman had been promoted to director of photography, shooting a range of film genres from westerns such as *Code of the Lawless* (1945) and *Gunman's Code* (1946) to thrillers and mysteries like *House of Horrors* (1946) and the Sherlock Holmes tale *Dressed to Kill* (1946), to homegrown comedies like *Ma and Pa Kettle* (1949).

During the 1950s, he photographed a number of features in Technicolor including *Bengal Brigade* (1954), *The Spoilers* (1955), *Raw Edge* (1956) and *Kelley and Me* (1957). Gertsman also shot the World War II motion picture *To Hell and Back* in Technicolor in 1955. The film, an adaptation of Audie Murphy's autobiography, had Murphy playing himself as the most decorated American soldier during the Great War, and featured realistic battle sequences highlighting Murphy's heroics.

Another example of Gertsman's diverse range of pictures was the 1956 Gill-Man "Creature" feature, *The Creature Walks Among Us*, which was shot in black-and-white as well as 3-D, the third installment of the *Creature from the Black Lagoon* series. He also served a cinematographer stint on the television series *Mr. Ed* from 1960-61 and on *The Lucy Show* and *Here's Lucy* from 1962-74, eventually retiring in 1976.

Gertsman became a member of the Society in 1947 upon the recommendations of fellows Fred W. Jackman and Milton Krasner. He was the recipient of the gold card celebrating 25 years as a Society member.

He is survived by his daughter, Bonnie Youngdahl; son-in-law, Robert Youngdahl; and grandson, Michael. ■

Frank W. Stanley, ASC passed away on December 21 in Sarasota, Florida, at the age of 77.

Born on May 5, 1922, to Polish immigrant parents in New York, Stanley, whose father was a well-known chef, grew up among the restaurants and clubs of Manhattan. His undergraduate career at Columbia University was interrupted by the outbreak of World War II. He joined the Marines and was wounded during the 1944 assault and capture of Peleliu Island in the South Pacific. Stanley was awarded a Letter of Commendation and the Purple Heart for his battlefield services, and was discharged in 1945 at the rank of Master Sergeant.

In 1946, Stanley began his career in motion pictures when he went to work for Technicolor. When Cecil B. DeMille's epic *The Ten Commandments* rolled in for optical work, Stanley was selected by optical photographer Paul Lerpae to handle the effects for the now-classic "parting of the Red Sea" sequence. While working on the scene, the jovial cinematographer-to-be let his good humor shine through, much to the dismay of DeMille. According to Barbara Bass, a longtime assistant director and friend of Stanley's, he had pulled a stunt during the effect screening that could have very easily ended his career. "When the slate came on the screen," Bass recalls, "it said, 'Eleventh Commandment, Parting of the Red Sea, Cecil B. DeMille, and the date.' DeMille went totally berserk, screaming, 'Stop the projector! Who would blaspheme God? I want the name of this person. They're going to be fired!' If anybody had said Frank's name, he'd have been out. But nobody ratted on him, and DeMille never got introduced to Frank."

While working as a loader and camera assistant for Walt Disney Productions, Stanley was hired in 1960 by Russell Harlan, ASC for *Hatari*, shot on location in Africa. Stanley wound up assisting for Harlan for nine years.

Stanley made the natural transition to director of photography and filmed several of Clint Eastwood's movies, including *Breezy* and *Magnum Force* (1973), *Thunderbolt and Lightfoot* (1974) and *The Eiger Sanction* (1975), followed by *Car Wash* (1976), the telefilm *James Dean* (1976), and *Corvette Summer* (1978). In 1979, Stanley photographed the outlandishly risqué Dudley Moore-Bo Derek film *10*, which launched Derek's career as a sex symbol.

In 1981, Stanley was chosen by director Harvey Hart to shoot the miniseries *East of Eden* (*AC* Feb. '81) in Savannah, Georgia. Based on John Steinbeck's novel, the picture featured lengthy tracking shots made with cranes. He followed that production with *Grease 2* and a number of telefilms, including *Heart of Steel* and *Passions*. He succeeded Hal Mohr, ASC as president of Local 659, and was inducted into the Society in 1975 upon the recommendation of member Burnett Guffey. He is survived by his companion, Claire J. Kern. ■

From the Clubhouse — *continued from page 133*

known NBC still photographer. During his photojournalist days from 1971-79, he received two Emmy Awards and earned Best Newsfilm of the Year honors from both Associated Press and United Press International. Smith subsequently turned his eye toward the entertainment realm, serving as a camera operator on many feature films.

The longtime operator stepped into the role of director of photography on the TV series *Picket Fences*. He later shot the pilot for *7th Heaven*, as well as multiple episodes of the show. Smith followed that project with a stint on the series *The Practice*, earning an ASC Award nomination for the episode "Happily Ever After" (*AC* Nov. '99). Smith noted that keeping the series' oft-used sets looking fresh was never a problem.

Smith has also filmed the feature *God's Lonely Man*, a 1996 Sundance Film Festival entrant, and the telefilm *Holiday Affair*.

New York-based **Peter Stein** inherited his passion for capturing images on film from his father, Fred Stein, an acclaimed photographer. He became a director of photography in 1974, and has since compiled an extensive resumé of feature film and television credits. His cinematography has earned him two Daytime Emmy Awards, for *Robbers, Rooftops and Witches* (1982) and *Don't Touch* (1986). His other television movie credits include *Izzy and Moe*, starring Jackie Gleason and Art Carney, *Parent Trap II*, *Elvis and Me*, Wes Craven's *Night Visions*, and *The Con*.

Stein has also filmed numerous feature chillers throughout his career, including Jason's comeback in *Friday the 13th, Part 2; C.H.U.D.*, a film about "cannibalistic humanoid underground

dwellers"; and two of Stephen King's spine-tinglers, *Pet Sematary* and *Graveyard Shift*.

At the opposite end of the spectrum, Stein has photographed the comedies *Ernest Saves Christmas* and *Ernest Goes to Jail*, as well as the gridiron spoof *Necessary Roughness* and the wrestler-out-of-water tale *Mr. Nanny*, starring Hulk Hogan. ■

WRAP SHOT

Director David Lean (seated front), cinematographer Guy Green, BSC (left), camera operator Nigel Huke (behind camera), camera assistant John Godar (next to matte box) and the rest of the camera crew on the set of the award-winning screen version of Charles Dickens's *Great Expectations*. Later, while filming *Oliver Twist* with Lean, Green learned that his work on *Great Expectations* had earned him an Oscar, which was collected on his behalf by Jean Simmons.

Perhaps the finest film adaptation of Charles Dickens's literary work was the 1946 production *Great Expectations*. This memorable picture was handcrafted by top British director David Lean and up-and-coming cinematographer Guy Green, BSC, who earned an Oscar for the stellar, moody black-and-white photography he created on forced-perspective sets.

The picture begins in 1830 and follows the life of orphan Pip Pirrip (Anthony Wager) from his humble beginnings as a blacksmith's apprentice to his life as an adult (John Mills), when he becomes the wealthy beneficiary of an escaped convict named Magwitch (Finlay Currie), whom he had helped during his youth. As an adult, Pip carries with him the emotional and physical scars caused by a childhood spent in the dusty Gothic home of the mad Miss Havisham (Martita Hunt), who never recovered from a wedding-day jilting, and her cruel but beautiful ward, Estella (played by Jean Simmons as a child and Valerie Hobson as an adult).

In addition to Green's Academy Award, this impeccable screen version of Dickens's tale earned Oscars for art direction and set decoration, as well as nominations for best picture, director and screenplay. Green, who didn't even know he was nominated, learned of his award while working on the set of another Dickens project directed by Lean, *Oliver Twist*. Ironically, Green was not the first choice to shoot *Great Expectations*. Robert Krasker, BSC shot the film's opening, an eerily atmospheric sequence in which young Pip encounters Magwitch in a graveyard. Green replaced Krasker and carefully matched the tone of his photography. The award-winning chemistry between Green and Lean led to several subsequent collaborations, including *The Passionate Friends* and the aforementioned *Oliver Twist* in 1948 (with 1999 ASC International Award-winner Oswald Morris operating camera), and *Madeleine* in 1950.

Lean can be credited for providing Green his first break as a cinematographer. Green was the camera operator under cinematographer Ronald Neame, BSC on Lean's *One of Our Aircraft Is Missing* and *In Which We Serve* in 1942. During Lean's subsequent 1944 project, *This Happy Breed,* the director's friend and fellow filmmaker, Carol Reed, had a photographic emergency on *The Way Ahead*. Lean suggested to Reed that he should try out Green, thus launching the latter's cinematographic career.

In 1947, Green filmed the costume drama *Blanche Fury* in Technicolor, but applied his low-key, high-contrast black-and-white lighting style. He debunked the idea that lighting for color was simple, a common notion of the time. "Photography for dramatic subjects," he said, "must reflect the emotional content of the scene. It must not be a glorious spectacle all on its own. Therefore, in some way it must be suppressed and made to lend itself to the subject dramatically. Monochrome or color, it is light that sets the scene." In the case of *Blanche Fury,* the result of this philosophy was a brooding color film with deep shadows, quite the opposite of a typical Technicolor display.

Green, who recently received the 1999 ASC Presidents Award, shot several other films in Technicolor, including *Captain Horatio Hornblower* (1950) and *Decameron Nights* (1953), one of the first Technicolor productions to use real interiors. In 1955, the honorary member of the British Society of Cinematographers photographed *Dark Avenger* and *I Am a Camera* before permanently giving up cinematography to sit in the director's chair.

— Douglas Bankston

Reporter 200DI.

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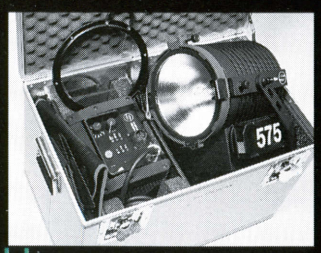

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